UCAC3 Proper Motion Survey. II. DISCOVERY OF NEW PROPER MOTION STARS IN UCAC3 WITH $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$ BETWEEN DECLINATIONS -47° and 00°

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ABSTRACT

We present 474 new proper motion stellar systems in the southern sky having no previously known components, with $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$ between declinations -47° and 00°. In this second paper utilizing the U.S. Naval Observatory third CCD Astrograph Catalog (UCAC3) we complete our sweep of the southern sky for objects in the proper motion range targeted by this survey with R magnitudes ranging from 9.80 to 19.61. The new systems contribute a $\sim$16% increase in the number of new stellar systems for the same region of sky reported in previous SuperCOSMOS RECONS (SCR) surveys. Among the newly discovered stellar systems are 16 multiples, plus an additional 10 components that are new common proper motion companions to previously known objects. A comparison of UCAC3 proper motions to those from Hipparcos, Tycho-2, Southern Proper Motion (SPM4), and SuperCOSMOS indicates that all proper motions are consistent to $\sim$10 mas/yr, with the exception of SuperCOSMOS. Distance estimates are derived for all stellar systems having SuperCOSMOS Sky Survey (SSS) B_J, R_{59F}, and I_{IVN} plate magnitudes and Two-Micron All Sky Survey (2MASS) infrared photometry. We find five new red dwarf systems estimated to be within 25 pc. These discoveries support results from previous proper motion surveys suggesting that more nearby stellar systems are to be found, particularly in the fainter, slower moving samples.

In this second paper utilizing the U.S. Naval Observatory third CCD Astrograph Catalog (UCAC3) we complete our sweep of the southern sky for objects in the proper motion range targeted by this survey with R magnitudes ranging from 9.80 to 19.61.

Subject headings: solar neighborhood — stars: distances — stars: statistics — surveys — astrometry

1. INTRODUCTION

The third U.S. Naval Observatory (USNO) CCD Astrograph Catalog (UCAC3) (Zacharias et al. 2010) proper motion survey, addresses the possibility that proper motion surveys using digitized scans of photographic plates

might overlook some proper motion systems. The UCAC3 obtained accurate proper motions by combining CCD observations with early epoch photographic data. This survey utilizes the UCAC3 proper motions to discover new systems that have been missed in previous efforts. The first paper in this series (Finch et al. 2010b) (hereafter, U3PM1), confirmed this suspicion by revealing an additional 25.3% stellar systems having a proper motion of $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$ between declinations -90° and -47° over those found by the Research Consortium On Nearby Stars (RECONS)[1] group using SuperCOSMOS Sky Survey (SSS) data. These new discoveries provided the impetus for this second paper of the series, which completes the sweep of the southern sky for systems with $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$ found in the UCAC3.

The data obtained from proper motion surveys aid astronomers in determining accurate stellar luminosity and mass functions, thereby revealing how the Galaxy's stellar mass is divided among different types of stars. Our main goal — identifying the Sun's nearest neighbors — provides a vast sample of red dwarf, subdwarf, and white dwarf stellar systems for studies of multiplicity, activity, ages, and exoplanet searches. Because of their proximity, the nearby stars offer the most accessible measurements of each of these characteristics.

Our UCAC3 proper motion survey is currently focused on the southern hemisphere, which has not been surveyed as systematically as the northern sky, where the pioneering surveys of Giclas (Giclas et al. 1971; Giclas et al. 1978) and Luyten (Luyten 1979; Luyten 1980) were primarily carried out. Historically, proper motion studies have been focused on blinking photographic plates taken at different epochs to determine source motions. Recent surveys that complement the classic efforts utilize various techniques, plate sets, modern computers, and carefully tailored algorithms to effectively blink digitized images of photographic plates. In the southern sky, such surveys include (Wroblewski & Torres 1994), (Wroblewski & Costa 1999), (Scholz et al. 2000; Scholz et al. 2002), (Oppenheimer et al. 2001), (Pokorny et al. 2003), (Lépine 2005; Lépine 2008), (Deacon et al. 2005; Deacon & Hambly 2007), and (Deacon et al. 2009).

In an effort to understand the stellar population of the solar neighborhood, the RECONS group has been targeting the neglected southern sky to reveal new stellar proper motion systems. To date, these discoveries have been reported in six papers in *The Solar Neighborhood* (TSN) series (Hambly et al. 2004), (Henry et al. 2004), (Subasavage et al. 2005a), (Subasavage et al. 2005b), (Finch et al. 2007), (Boyd et al. 2011). These new systems are discovered using the SuperCOSMOS Sky Survey (SSS) data (Hambly et al. 2001a) and given the name SCR (SuperCOSMOS-RECONS). Followup observations of intriguing systems are performed at the Cerro Tololo Inter-American Observatory (CTIO) 0.9m telescope, where RECONS operates a trigonometric parallax program focusing on stars within 25 pc.

Our UCAC3 survey uses an approach fundamentally different from plate blinking to reveal proper motion systems. We take advantage of observations reported in many catalogs ranging in epochs from the early nineteenth to the early twenty-first centuries, rather than directly using specific sets of digitized images from photographic plates. In this investigation we focus on stellar systems in the UCAC3 found between declinations -47° and 00° that have $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$, completing a sweep of the southern sky. The search region and proper motion range matches that in (Boyd et al. 2011), hereafter TSN25, in which the lower proper motion cutoff was chosen to match that of the NLTT catalog. TSN25 reports 2817 new SCR systems, substantially adding to the number of new SCR systems found previously. In Table 1, we summarize the number of new stellar systems discovered, highlighting those estimated to be within 25 pc, for both the RECONS and UCAC3 surveys. In this paper we will focus in particular on the two SCR searches (TSN18 and TSN25) that correspond to the same proper motion and declination ranges as this UCAC3 survey (U3PM1 and this paper). New stellar objects from this search are given USNO Proper Motion (UPM) names.

[1] *www.recons.org*

2. Method

2.1. UCAC3

The USNO CCD Astrograph Catalog (UCAC) project finished observations in late 2004 and has been producing astrometric catalogs since October 2000. This astrometric survey was conceived to densify the optical reference frame to high accuracy beyond the Hipparcos and Tycho magnitudes. UCAC is the first all-sky survey performed with a CCD detector utilizing the high level of precision achievable with this technology. The first release, UCAC1, (Zacharias et al.2000), was a partial catalog covering 80% of the southern sky. The second catalog, UCAC2, (Zacharias et al. 2004), contains roughly 80% of the entire sky and includes improved proper motions from the use of early epoch plates paired with the Astrograph CCD data. UCAC3 (Zacharias et al. 2010), released in August 2009, is the first in the series to contain coverage of the entire sky. UCAC3 also includes double star fitting and has a slightly deeper limiting magnitude than UCAC2 due to a complete re-reduction of the pixel data (Zacharias 2010). In addition, data from the Two-Micron All Sky Survey (2MASS) were used in UCAC3 to probe for and reduce systematic errors in UCAC observations, providing a greater number of reference stars to stack up residuals as a function of many parameters, such as observing site and exposure time. A detailed description of the astrometric reductions of UCAC3 can be found in (Finch et al. 2010a). A detailed introduction to the UCAC3 can be found in the release paper (Zacharias et al. 2010) and the README file of the data distribution. A new edition, UCAC4, (Zacharias et al. 2011) is scheduled to be released later this year.

2.2. PROPER MOTIONS

The UCAC3 contains roughly 95 million calculated absolute proper motions. The majority of these are derived proper motions from the use of early epoch catalogs paired with the Astrograph CCD data. Earlier epoch data are all reduced to the International Celestial Reference Frame (ICRF). UCAC3 mean positions and proper motions are calculated using a weighted, least-squares adjustment procedure.

Bright stars with R$\sim$8–12 in UCAC3 are combined with ground-based photographic and transit circle catalogs. These include all catalogs used for the production of the Tycho-2 project (Høg et al. 2000), unpublished measures of over 5000 astrograph plates digitized on the StarScan machine (Zacharias et al. 2008), new reductions of Southern Proper Motion (SPM) (Girard et al. 2011) data, and data from the SuperCOSMOS project (Hambly et al. 2001a). About 1.2 million star positions to about B= 12 entered UCAC from digitizing the AGK2 plates (epoch about 1930). The Hamburg Zone Astrograph and USNO Black Birch Astrographs contributed another 7.3 million star positions, mainly in the V=12 – 14 magnitude range, in fields covering about 30% of the sky, and the Lick Astrograph plates taken around 1990 yielded over one million star positions to V=16 in selected fields.

For all catalogs used to derive UCAC3 proper motions a systematic error estimate was added to the root mean square (RMS) of the individual stars random errors. The largest error floor added was 100 mas for the SuperCOSMOS data due to zonal systematic errors ranging from 50–200 mas when compared to 2MASS data.

To identify previously known high proper motion (HPM) stars in the UCAC3, a source list was compiled using the VizieR on-line data tool, along with targeted supplements from published literature. In the north we used the LSPM-North catalog (Lépine 2005) containing 61977 new and previously found stars having proper motions greater than $0\farcs15$ yr^{-1}. For the south we utilized many surveys, notably including the Revised NLTT Catalog (Salim & Gould 2003), which produced 17730 stars with proper motions greater than $0\farcs15$ yr^{-1}, and the RECONS efforts (SCR stars). For a full list of catalogs used, see the UCAC3 README file. While this list is not comprehensive, this effort tagged roughly 51000 known HPM stars in UCAC3 over the entire sky. These previously identified HPM stars were given a mean position (MPOS) number greater than 140 million and do not have derived UCAC3 proper motions. We instead used the proper motion data from the catalogs themselves (see §4.5).

Proper motion errors in the UCAC3 catalog for stars brighter than R$\sim$12 are only $\sim$1–3 mas/yr in part because of the large epoch spread of roughly

100 years in some cases. The errors of the fainter stars range from ∼2–3 mas/yr if found in SPM4 and ∼6–8 mas/yr if SuperCOSMOS data are used in lieu of SPM4 data.

2.3. SEARCH CRITERIA

In this second paper we survey the southern sky between declinations −47° and 0° using the same proper motion range as in U3PM1, $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$. In this area of the sky we identify an initial sample of 212356 proper motion candidates. We utilize the same search criteria as in U3PM1, using UCAC3 flags with values indicative of real proper motion objects. A visual check from a sample of stars confirmed that these flags still hold true in the region of the sky being surveyed. All stars must (1) be in the 2MASS catalog with an e2mpho (2MASS photometry error) less than or equal to 0.05 magnitudes in all three bands, (2) have a UCAC fit model magnitude between 7 and 17 mag, (3) have a double star flag (dsf) equal to 0, 1, 5 or 6, meaning a single star or fitted double, (4) have an object flag (objt) between −2 and 2 to exclude positions that used only overexposed images in the fit, (5) have an MPOS number less than 140 million, to exclude already known high proper motion stars, and (6) have a LEDA galaxy flag of zero, meaning that the source is not in the LEDA galaxy catalog. After all these cuts, there remain 17516 "good" candidate list, fewer than expected for this region of the sky, when compared to 9248 in U3PM1. A total of 7641 candidates were excluded from the "good" candidates due to being marked as previously known in the UCAC3 catalog (MPOS number greater than 140 million).

These candidates were then cross-checked via VizieR and SIMBAD to determine if they were previously known. All cross-checks are performed using a 90″ search radius, with one exception (the NLTT catalog). A larger search radius of 180″ was used when comparing UPM candidates to the NLTT and LHS catalog, which have been found to have inaccurate positions as reported in (Bakos et al. 2002). Thus, UCAC3 proper motion candidates with positions differing from Luyten's or any other known object by less than 90″ are considered known. Those differing from Luyten's by 90–180″ are considered new discoveries but are noted as possible NLTT stars in the tables. Those differing by more than 180″ from Luyten are considered new discoveries. All candidates matched to known stars had a final check to determine if the proper motion and magnitudes matched — those that match are considered known and not reported in this sample. As in U3PM1, it is not a goal of this paper to revise the NLTT catalog and assign proper identifications and accurate positions to NLTT entries; rather, the goal is to identify new high proper motion stars.

After this, in effect, second cross-check for previously known stars, the list was reduced to a manageable 3736 candidate proper motion objects. The 13780 known objects found during this cross-check shows how incomplete the UCAC3 catalog can be in identifying previously known high proper motion objects with the given search criteria. Each of these candidates was then visually inspected to confirm proper motion by blinking the B_J and R_{59F} SuperCOSMOS digitized plate images. During blinking, we noticed that for declinations between roughly −33° and 0° the epoch spread was insufficient (∼3–5 years) to visually verify proper motion for all candidates. For those candidates, a second sweep was done by blinking the $POSS-IR$ and R_{59F} SuperCOSMOS digitized plate images. Nearly 87% of the candidates were found to have no verifiable proper motions and were discarded. The final counts of new discoveries are 500 proper motion objects in 474 systems. Among these are 25 multiple systems (24 doubles and one triple), of which ten were found to have CPM to previously known primaries.

For this search we find a successful hit rate — defined as the number of new and known proper motion stars (21921) divided by the total "good" candidates extracted (25157, including stars with an MPOS number > 140 million) — of 87.1%, which is higher than the 81.4% hit rate found in TSN25. After looking into the calculation used in U3PM1 to determine the successful hit rate a counting error was found. The number of real objects excluded the known proper motion objects tagged in the UCAC3 catalog (stars with an MPOS number > 140 million). If we add these stars in the total for the U3PM1 count, we get a total of 7975 real objects giving a new successful hit rate of 86.2%, which is comparable to this paper. At least three factors mentioned in U3PM1 have been identified that can lead to false detections in the UCAC3 proper motion survey. First, some

real objects are discarded during the sifting mentioned above, particularly because of the 2MASS criterion which states that JHK_s photometry errors must be less than 0.05 mag. Second, the UCAC3 contains many phantom proper motion objects due to incorrect matches during proper motion calculations. Third, other misidentifications arise from blended images, where a single source in an earlier epoch catalog can be matched with two stars in the UCAC3 data.

3. RESULTS

In Table 2, we list the 474 new proper motion stellar systems (500 objects) discovered during this search. We highlight the five red dwarf systems estimated to be within 25 pc in Table 3. In both tables we list names, coordinates, proper motions, 1σ errors in the proper motions, plate magnitudes from SuperCOSMOS, near-IR photometry from 2MASS, the computed $R_{59F} - J$ color, a distance estimate, and notes.

3.1. Positions and Proper Motions

All positions on the ICRF system, proper motions, and errors are taken directly from UCAC3, unless otherwise noted. For a few stars that were found during visual inspection without any UCAC3 data, information has been obtained from alternate sources (see §3.4). For this sample, the average positional errors reported in the UCAC3 catalog are 51 mas in RA and 50 mas in Dec. For proper motions, the average errors reported in the UCAC3 for this sample are 8.0 mas/yr in $\mu_\alpha \cos\delta$ and 7.7 mas/yr in μ_δ.

3.2. Photometry

In Tables 2 and 3, we give photographic magnitudes from the SuperCOSMOS and 2MASS surveys. From SuperCOSMOS, magnitudes are given from three plate emulsions, B_J, R_{59F}, and I_{IVN}. Magnitude errors are typically less than 0.3 mag for stars fainter than ∼15, with errors increasing for brighter sources. From 2MASS, JHK_s infrared photometry is given, with errors typically 0.05 mag or less due to the search criteria. Additional objects found during visual inspection are typically fainter with larger photometric errors. The $R_{59F} - J$ color has been computed to indicate the star's color.

While SuperCOSMOS magnitudes are reported in the UCAC3, this sample was checked against the SuperCOSMOS catalog to rectify some mismatches found in the UCAC3 catalog. In some cases, SuperCOSMOS magnitudes are not given in the tables, due to blending, no source detection, high chi-square or other problems where no reliable magnitude is available. 2MASS magnitudes are given for all but one object which was found visually that is not present in the 2MASS catalog, as indicated in the notes.

3.3. Distances

Plate photometric distance estimates are computed using the same method as in U3PM1 and previous SCR searches. Using the relations in (Hambly et al. 2004), 11 distance estimates are generated based on colors computed from the six-band photometry. This method assumes all objects are main sequence stars, and provides distances accurate to 26%, determined from the mean differences between the true distances for stars with accurate (errors less than 10 mas) trigonometric parallaxes and distances estimated from the relations. Errors are higher for stars with missing photometry, resulting in fewer than 11 relations, and stars that are not single, main sequence red dwarfs, e.g. cool subdwarfs and white dwarfs. It is possible to produce a distance with only one relation; however, six are needed to be considered "reliable" because that allows for one magnitude dropout. Stars having fewer than six relations are identified in the notes to Tables 2 and 3. If a star is identified as a possible subdwarf, the distance estimate is expected to be too large and is given in brackets.

3.4. Additional Objects

In Table 2 we include 17 additional proper motion objects found during visual inspection of the candidate fields. These objects are CPM companion candidates that either have fainter limiting magnitudes than implemented for this search, were eliminated from the candidate list by the search criteria, or have UCAC3 proper motions less than $0\farcs18$ yr^{-1}. These new visual discoveries have all been cross-checked with VizieR and SIMBAD using the same methods described above for the main search. Proper motions have been obtained from UCAC3, SPM4,

PPMXL (Roeser et al. 2010), or SuperCOSMOS, in that order. For stars that were not found in the UCAC3 data, positions were computed using the epoch, coordinates, and proper motion obtained from the corresponding catalog. Magnitudes are obtained using the 2MASS and SuperCOSMOS catalogs to compute distance estimates.

4. ANALYSIS

4.1. Color-Magnitude Diagram

In Figure 1 we show a color-magnitude diagram of the 334 new UPM proper motion objects (solid circles) and seven known objects (open triangles, companions to UPM objects) from this search having $R_{59F} - J$ colors. Symbols that fall below $R_{59F} \sim 17$ are CPM companion candidates noticed during visual inspection. The brightest new object, UPM 0747-2537A, has $R_{59F} = 9.80$ and is estimated to be at a distance of 40.6 pc. The reddest object found in this search is UPM 1848-0252 with $R_{59F} - J = 5.06$, $R_{59F} = 16.57$, at an estimated distance of 26.9 pc.

The subdwarf population is not as well defined as in TSN18 and TSN25 because there are far fewer new objects. Nonetheless, a separation can be seen below the concentration of main sequence stars.

4.2. Reduced Proper Motion Diagram

In Figure 2, we show the reduced proper motion (RPM) diagram for all objects also plotted in Figure 1, with similar symbols for new and known objects. The RPM diagram is a good method to help separate white dwarfs and subdwarfs from main-sequence stars, under the assumption that objects with larger distances tend to have smaller proper motions. Using the same method as in U3PM1 and TSN25 we obtain $H_{R_{59F}}$ via a modified distance modulus equation, in which μ is substituted for distance:

$$H_{R_{59F}} = R_{59F} + 5 + 5 \log \mu.$$

The solid line seen in Figure 2 is used to separate white dwarfs from subdwarfs. This is the same empirical line used in U3PM1 and previous TSN papers. No white dwarf candidates have been found during this latest search.

Subdwarf candidates have been selected using the same method as in U3PM1 and TSN25 — stars with $R_{59F} - J > 1.0$ and within 4.0 mag in H_R of the empirical line separating the white dwarfs are considered subdwarfs. From this survey there are 17 subdwarf candidates, all with distance estimates greater than 122 pc, with the exception of one, UPM 1712-4432, with an estimated distance of 33.9 (see §4.4). Because the relations used to estimate distances assume that stars are on the main sequence, underluminous cool subdwarfs and white dwarfs have large distances, which can, in fact, be used to identify such objects. The distance estimates for these stars are presumably erroneous and are given in brackets in Tables 2, 3 and 4. Follow-up spectroscopic observations will be needed to confirm all subdwarf candidates.

4.3. New Common Proper Motion Systems

In this search, we find 25 CPM candidate systems consisting of 24 binaries and one triple. Included in these CPM systems are 16 new systems and nine known systems with newly discovered components.

One binary system, UPM 0800-0617AB is a possible subdwarf binary system. The lone triple is an SCR system with two newly discovered components. In Table 4, we list the CPM system primaries and companions, their proper motions, and the companions' separations and position angles relative to the primaries (defined to be the brightest star in each system using the UCAC bandpass, or an alternate bandpass if a UCAC value is not available). We also provide distance estimates for each component, where possible. Components were determined to be potentially physically associated using distance estimates in conjunction with the proper motions and visual inspections. However, most of the companions were found during visual inspection, meaning that proper motions, 2MASS and/or SuperCOSMOS magnitudes may be missing or suspect, as identified in the notes. For systems with data missing in Table 4, the physical connection of the system components should be considered tentative.

In Figure 3, we show comparisons of the proper motions in each coordinate for the 19 CPM systems for which both components have a listed proper motion. CPM candidates having proper

motions from the UCAC3 are represented by solid circles while those with proper motions from other sources are represented by open circles. If a proper motion was not present in the UCAC3, data were obtained manually from the SPM4, PPMXL or SuperCOSMOS databases, in that order.

4.4. Notes on Specific Stars

UPM 0443-4129AB is a possible CPM binary. However, UPM 0443-4129A has a suspect proper motion and the companion's distance estimate uses fewer than 6 relations. It is possible that this pair is a case of a chance alignment. See Table 4 for more details.

BD-04 2807AB is a possible CPM binary. However, the primary has a suspect proper motion, a distance estimate that uses fewer than 6 relations, and there is no distance estimate for the secondary. It is possible that this pair is a case of a chance alignment. See Table 4 for more details.

UPM 0747-2537A is the brightest new discovery from this search with $R_{59F} = 9.80$ and an estimated distance of 40.6 pc. However, only one relation was viable, making the distance estimate unreliable.

UPM 0800-0617AB is a possible candidate for a binary subdwarf system. The primary is a possible subdwarf at an estimated distance of 175.5 pc. The secondary is at a separation of 5.8″ at position angle 297.2° from the primary. Color information is insufficient for a reliable distance estimate.

UPM 1226-3516B and C are in a candidate triple system with SCR 1226-3515A. The A and B components are separated by 49.8″ at a position angle of 191.3°. The C component has a separation of 97.0″ at a position angle of 146.9° from the primary. The C component has a suspect proper motion and the distance estimates for all there components are inconsistent. In particular, the C component may not be a part of the system. See Table 4 for more details.

UPM 1712-4432 is a subdwarf candidate with $R_{59F} = 13.04$ and $R_{59F} - J = 1.01$ at a distance of 33.9 pc. However, only three relations were viable, making the distance estimate unreliable. SuperCOSMOS magnitudes are indicative of a blended image, meaning this is likely not what it seems.

UPM 1718-2245B has an estimated distance of only 13.2 pc based on 7 relations, making it the nearest candidate in the sample. However, the primary has a distance estimate of 25.4 pc based on 10 relations so we favor the larger distance for the system.

UPM 1848-0252 is the reddest new discovery from this search, with $R_{59F} - J = 5.06$ and an estimated distance of 26.9 pc.

4.5. Comparison to Previous Proper-Motion Surveys

During production of the UCAC3 catalog, we made an effort to tag previously known HPM stars. For these stars, proper motions were taken from their respective catalogs rather than calculated using UCAC3 methodology, which made comparisons to other catalogs/surveys difficult. However, during the present search we have found 104 stars in both the Hipparcos and Tycho-2 catalogs that are not tagged as HPM stars in the UCAC3 catalog — these stars are proper motion candidates that were found to be in Tycho-2 during cross-checking. A 2.5″ radius was used to match these stars to sources in the Hipparcos catalog so that we can compare the bright end of the UCAC3 proper motion stars ($R \sim 7.13$-13.66) to stars in both the Tycho-2 and Hipparcos catalogs. In Figure 4, we compare proper motions in RA and Dec for these stars as given in UCAC3, Hipparcos, and Tycho-2. These plots show that the differences in proper motions are small, in general less than 10 mas/yr, and no significant systematic errors as a function of declination are seen. The RMS differences between UCAC3 proper motions in $\Delta\mu_\alpha \cos\delta$ and $\Delta\mu_\delta$ and those from Hipparcos are 5.7 and 9.1 mas/yr, respectively. Comparisons to Tycho-2 yield RMS differences of 5.2 and 8.3 mas/yr, respectively. Lower RMS differences of 3.0 mas/yr in $\Delta\mu_\alpha \cos\delta$ and 3.2 mas/yr in $\Delta\mu_\delta$ are seen when comparing the Hipparcos to Tycho-2 proper motions.

To investigate the fainter end of UCAC3, we compare results for 77 stars ($R \sim 10.88$-16.69) that are in both the SPM4 and SuperCOSMOS catalogs that were not tagged as HPM stars in the UCAC3 catalog — these stars are proper motion candidates that were found to be SCR stars during cross-checking. A 2.5″ radius was used to match these stars to sources in the SPM4 catalog. The SPM4 catalog only covers Dec = −90 to −20 sky

area, limiting the area included for this comparison. In Figure 5, we compare proper motions in RA and Dec for these stars as given in UCAC3, SuperCOSMOS, and SPM4. These plots show that differences in proper motions are similar to those found for brighter stars when comparing UCAC3 and SPM4, but the differences are much larger for the SuperCOSMOS results. The RMS differences between UCAC3 proper motions in $\Delta\mu_\alpha \cos\delta$ and $\Delta\mu_\delta$ and those in SPM4 are 6.0 and 5.7 mas/yr respectively. Comparisons to SuperCOSMOS yield RMS differences of 16.5 and 14.1 mas/yr, respectively. In Figure 5, we also see that proper motions in Dec appear to be systematically shifted in the SuperCOSMOS data. These high RMS results and the systematic shift are also seen in the comparison of the SPM4 to the SuperCOSMOS proper motions, yielding RMS differences of 15.6 and 15.2 mas/yr in $\Delta\mu_\alpha \cos\delta$ and $\Delta\mu_\delta$, respectively. The higher RMS differences for the SuperCOSMOS proper motions are in agreement with the findings of TSN18 and U3PM1 where SCR proper motions were found to have higher RMS differences when compared to other external catalogs. It is worth noting that the SuperCOSMOS proper motion RMS reported here are not representative of the entire catalog. Objects having an R$\sim$16–19 with $\mu > 0\farcs10$ yr^{-1} in the SuperCOSMOS catalog should have an RMS no greater than 10 mas/yr, and considerably better for fields with decades between the epochs (See Tables 1 and 3 from (Hambly et al. 2001b)).

Random and systematic differences of order 10 mas/yr in proper motions between the various catalogs, particularly at the faint end, are expected because of different data quality, measurements, reductions and epoch differences. SuperCOSMOS for example uses Schmidt plates for both early and recent epoch which typically show large errors. The proper motions of faint stars in UCAC3 are based on early epoch Schmidt plates for the sky area north of -20 deg Dec and CCD observations for recent epoch data. A combination of CCD data and early astrograph data (SPM plates) is used south of -20 deg, with significantly smaller errors. The SPM4 proper motions are derived entirely on SPM astrograph plates from 2 epochs. At the bright end proper motions are more reliable due to higher quality of Hipparcos and Tycho data as well as availability of many other star catalogs, most of which have been used in common between Tycho-2 and UCAC3. However, there can be large differences between Hipparcos and Tycho-2 for some stars because the Hipparcos PMs are based on only about 3.5 years of observing (although with high quality), while Tycho-2 PMs are based on typically 100 years epoch difference. Multiplicity and residual orbital motions sometimes render Hipparcos PMs inferior in spite of their small formal astrometric errors.

In TSN25 a total of 3073 objects were reported, all of which fit within the proper motion and declination constraints of this paper. During this UCAC3 search, only 770 of the 3073 objects reported in TSN25 were recovered, or a low 25.1% recovery rate. This is primarily due to the UCAC3 catalog having no proper motion or a reported proper motion not meeting the criteria of this paper ($0\farcs40$ yr$^{-1} > \mu \geq 0\farcs18$ yr^{-1}) for $\sim$70% of the new discoveries listed in TSN25.

The Hipparcos catalog contains 118218 total objects, of which 1690 meet the proper motion and declination constraints of this paper. Tycho-2 contains 2539913 total objects in the main catalog, of which 3187 meet similar limits. We recover 1316 Hipparcos stars and 2543 Tycho-2 stars using the search criteria of this paper, yielding recovery rates of 77.9% and 79.8% respectively. Objects missed in this UCAC3 survey are primarily due to UCAC3 lacking a source detection for $\sim$15% of the Tycho-2 objects. The relatively high recovery rates of UCAC3, when compared to the Hipparcos and Tycho-2 catalogs, implies the UCAC3 can be used as a reliable source to search for new proper motion stars with $\mu = 0.18$–$0.40''$ yr^{-1} for other portions of the sky.

5. DISCUSSION

We have completed a sweep of the southern sky for new proper motion systems using the UCAC3 catalog. So far, we have uncovered 916 new proper motion systems, of which 474 are described in this paper. These systems constitute an increase of 19.4% over the total number of SCR systems discovered in the southern sky and an increase of 20.7% over SCR systems in the southern sky with $0\farcs40$ yr$^{-1} > \mu \geq 0\farcs18$ yr^{-1}. This UCAC3 proper motion survey has added 3.8% to the list of entries in the NLTT catalog south of Dec = 0° with 974

new proper motion objects from U3PM1 and this paper.

In Figure 6, we show the sky distribution of systems found to date during the UCAC3 proper motion survey. Plus signs represent objects from U3PM1 and solid circles represent objects described in this paper. Overall, the distribution of new objects is similar to that seen in Figure 6 of TSN25, including the discovery of many new proper motion systems along the Galactic plane.

In Figure 7, we show a histogram of the number of proper motion systems discovered to date during the UCAC3 proper motion survey, in $0\farcs01$ yr^{-1} bins, and highlighting the number of those having distance estimates within 50 pc. Predictably, this plot shows that the slowest proper motion bins have the most new systems. This confirms the trend reported in TSN18, TSN25 and U3PM1, and suggests once again that more nearby stars are yet to be found at slower proper motions.

We have found a total of 57 CPM candidate systems during this UCAC3 proper motion survey, including 55 binaries and two triples. These systems have separations of 1–359″ and will need further investigation to confirm which of the systems are, in fact, gravitationally linked. In addition, we have revealed a total of 48 subdwarf candidates, each of which is worthy of followup observations, given the scarcity of nearby subdwarfs. Finally, we have found 20 red dwarf systems likely to be within 25 pc. We plan to obtain CCD photometry through VRI filters for stars having estimated distances within 25 pc in order to make more reliable distance estimates using the $VRIJHK$ relations presented in (Henry et al. 2004). Stars estimated to be within 10 pc will then be put on the CTIO parallax program, potentially to join the ranks of the few hundred systems known to be so close to the Sun (Henry et al. 2006).

We thank the entire UCAC team for making this proper motion survey possible, and the USNO summer students, who helped with tagging HPM stars in the UCAC3 catalog. Special thanks go to members of the RECONS team at Georgia State University for their support, and John Subasavage in particular for assistance with the SCR searches. This work has made use of the SIMBAD, VizieR, and Aladin databases operated at the CDS in Strasbourg, France. We have also made use of data from the Two-Micron All Sky Survey, SuperCOSMOS Science Archive and the Southern Proper Motion catalog.

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This 2-column preprint was prepared with the AAS LaTeX macros v5.2.

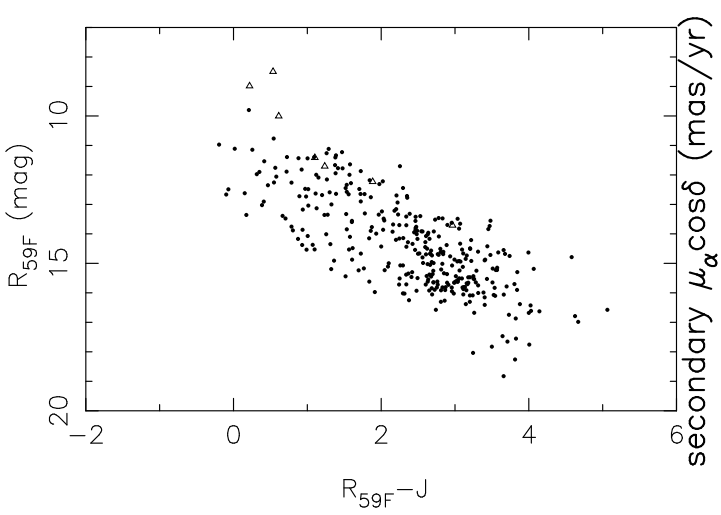


Fig. 1.— Color-apparent magnitude diagram for all proper motion systems in the sample having an $R_{59F}-J$ color. New proper motion objects are represented by solid circles while known objects (CPM companions to new objects) are represented with open triangles. Data below $R_{59F} = 17$ are CPM candidates noticed during visual inspection.

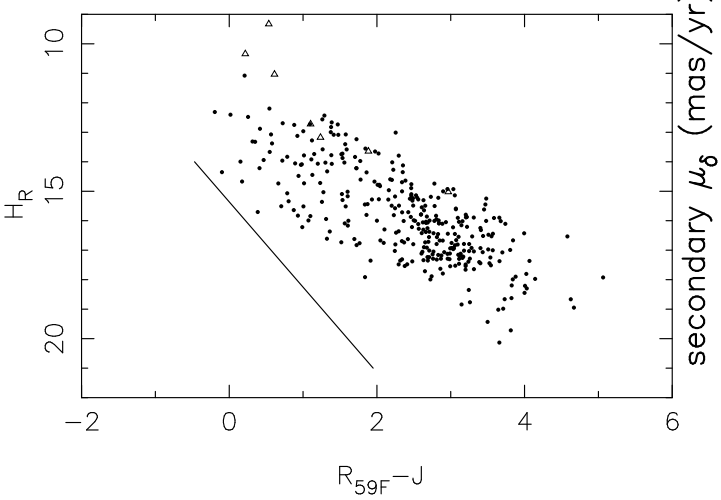
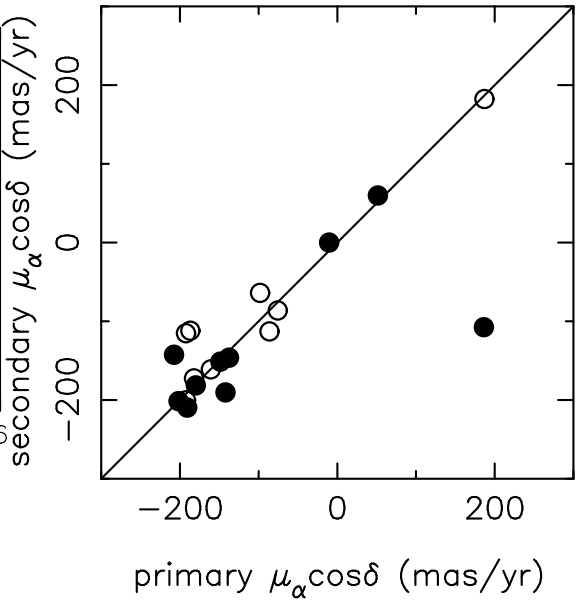


Fig. 2.— RPM diagram for all proper motion systems in this sample having an $R_{59F}-J$ color. New proper motion objects are represented by solid circles while known objects (CPM companions to new objects) are represented with open triangles. The empirical line separates the subdwarfs from where white dwarf candidates would be found. No white dwarf candidates were found in the current search.



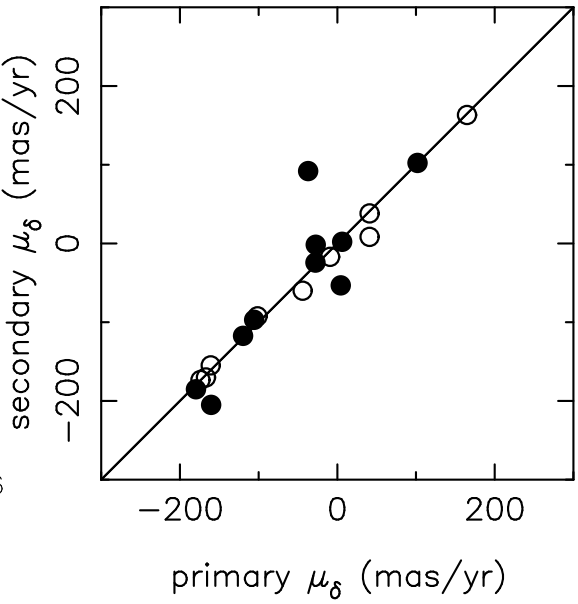


Fig. 3.— Comparisons of proper motions in each coordinate, $\mu_\alpha \cos\delta$ (top) and μ_δ (bottom), for components in CPM systems. Proper motions from the UCAC3 catalog are represented by solid circles while proper motions manually obtained through other means are denoted by open circles. The solid line indicates perfect agreement. Information on the outliers can be found in §4.4

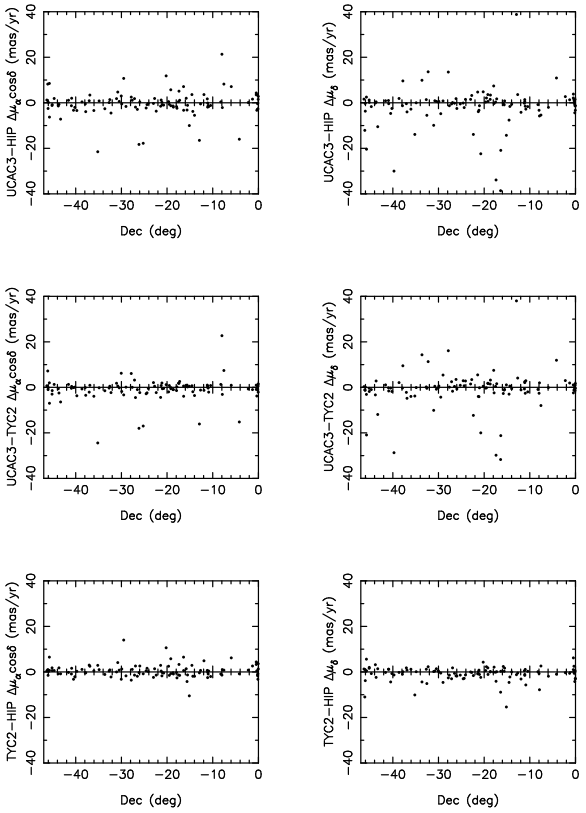


Fig. 4.— Comparisons of UCAC3, Hipparcos and Tycho-2 proper motions per coordinate, $\Delta\mu_\alpha \cos\delta$ (left column) and $\Delta\mu_\delta$ (right column).

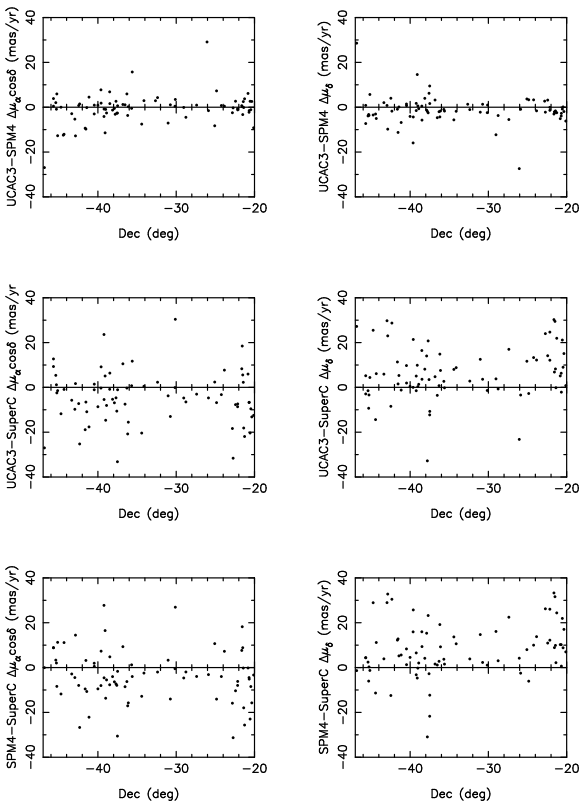


Fig. 5.— Comparisons of UCAC3, SuperCOSMOS and SPM4 proper motions per coordinate, $\Delta\mu_\alpha \cos\delta$ (left column) and $\Delta\mu_\delta$ (right column).

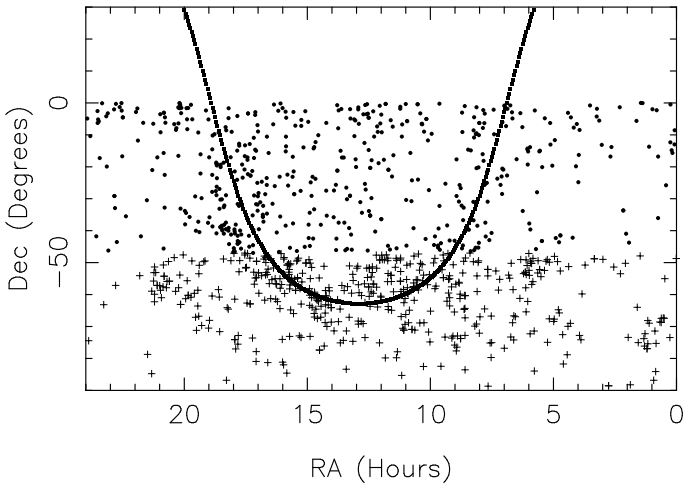


Fig. 6.— Sky distribution of all UCAC3 proper motion survey objects reported in U3PM1 (plus signs) and this paper (solid circles), i.e. those between declinations $-90°$ and $0°$ having $0\farcs40$ yr^{-1} $> \mu \geq 0\farcs18$ yr^{-1}. The curve represents the Galactic plane.

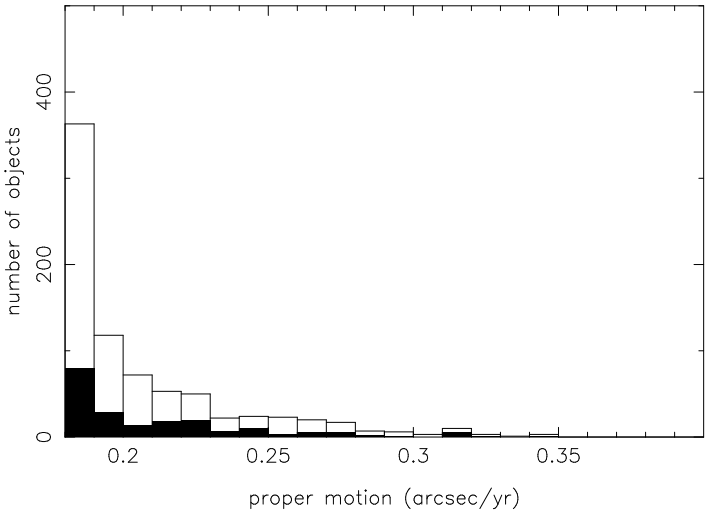


Fig. 7.— Histogram showing the number of proper motion objects in $0\farcs01$ yr^{-1} bins for the entire UCAC3 proper motion sample (empty bars) and the number of those objects having distance estimates within 50 pc (filled bars).

TABLE 1
NEW PROPER MOTION SYSTEMS FROM THE UCAC3 AND SCR PROPER MOTION SURVEYS

Paper	New Systems total	New Systems $\leq$ 25 pc	References
U3PM1	442	15	(Finch et al. 2010b)
U3PM2	474	4	this paper
TSN08	5	2	(Hambly et al. 2004)
TSN10	4	4	(Henry et al. 2004)
TSN12	141	12	(Subasavage et al. 2005a)
TSN15	152	25	(Subasavage et al. 2005b)
TSN18	1605	30	(Finch et al. 2007)
TSN25	2817	79	(Boyd et al. 2011)
totals	5640	171	

TABLE 2

NEW UCAC3 HIGH PROPER MOTION SYSTEMS BETWEEN DECLINATIONS $-47°$ AND $0°$ WITH $0\farcs40$ YR^{-1} $> \mu \geq 0\farcs18$ YR^{-1}

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 0004-0833	1.1472383	-8.5664958	182.2	-26.3	8.6	8.6	14.680	12.649	11.643	10.874	10.255	10.072	1.775	63.8	
UPM 0004-1258	1.2061531	-12.9791222	102.0	-156.8	10.2	6.6	14.504	12.478	11.385	10.774	10.160	9.973	1.704	62.3	
UPM 0009-1539	2.4914975	-15.6590597	184.0	-15.7	8.7	8.7	17.100	15.050	13.144	12.387	11.793	11.562	2.663	93.0	
UPM 0011-1448	2.9555050	-14.8079581	179.8	-34.9	9.0	9.0	14.785	13.131	12.454	12.005	11.353	11.246	1.126	115.6	
UPM 0014-0029	3.6589169	-0.4939803	161.0	-104.7	13.7	14.0	17.819	15.829	13.947	12.292	11.708	11.457	3.537	58.7	
UPM 0014-1219	3.7410256	-12.3317842	183.9	-21.6	7.0	3.9	17.189	15.068	13.388	12.808	12.230	11.974	2.260	130.3	
UPM 0025-2547	6.3606617	-25.7849942	170.4	65.2	9.4	9.3	20.968	18.826	16.962	15.167	14.514	14.163	3.659	179.8	a
UPM 0044-1647	11.1954375	-16.7984897	187.8	29.7	14.6	14.1	...	...	13.280	12.405	11.777	11.549	...	91.5	b
UPM 0045-3602	11.2618550	-36.0381975	118.0	-136.9	3.2	2.4	15.862	13.863	11.982	11.398	10.888	10.610	2.465	67.0	
UPM 0048-0217	12.1068206	-2.2840133	163.9	-75.0	8.9	8.3	16.715	14.628	12.563	11.042	10.488	10.194	3.586	31.8	
UPM 0058-0158	14.6628417	-1.9776981	-48.2	-181.1	11.2	11.2	18.275	16.265	14.745	13.405	12.870	12.662	2.860	141.3	
UPM 0106-1342	16.7276508	-13.7017203	173.8	95.7	7.4	7.4	...	...	...	12.372	11.775	11.689	...	...	b
UPM 0122-0003	20.6797608	-0.0530356	151.7	162.8	9.6	9.1	...	...	13.816	12.612	11.930	11.729	...	76.4	b
UPM 0126-0000	21.7387347	-0.0141164	188.1	43.8	12.2	12.1	...	...	...	12.074	11.374	11.219	...	...	b
UPM 0137-0537	24.3814961	-5.6331831	236.7	-75.4	8.4	8.7	...	...	...	12.573	12.028	11.810	...	...	b
UPM 0155-4344	28.9240619	-43.7373506	148.1	106.2	2.0	3.5	16.195	13.912	12.128	11.368	10.829	10.575	2.544	59.8	
UPM 0202-4056	30.6998675	-40.9468992	180.1	-67.9	2.6	2.6	...	...	...	10.454	9.754	9.572	...	...	b c
UPM 0209-3339A	32.4333397	-33.6586869	-86.1	-166.9	4.2	2.0	16.526	14.533	12.628	11.437	10.885	10.605	3.096	49.5	d
UPM 0209-3339B	32.4371381	-33.6580217	-112.9	-170.2	7.6	8.3	...	...	...	12.025	11.489	11.131	...	...	b d e
UPM 0218-0120	34.5873781	-1.3488447	166.5	-88.5	9.9	10.5	13.640	12.620	12.263	12.468	12.109	12.034	0.152	...	b
UPM 0238-1348	39.6759683	-13.8016906	173.3	-114.7	9.9	9.6	...	...	...	11.998	11.375	11.263	...	...	b
UPM 0241-1647	40.2660111	-16.7848081	16.5	-182.4	11.2	11.0	15.606	14.528	14.078	13.429	12.940	12.857	1.099	[216.7]	b f
UPM 0302-1307	45.5532964	-13.1308544	139.0	-117.1	16.5	14.2	17.954	16.054	14.408	13.364	12.816	12.536	2.690	146.8	
UPM 0308-0532	47.0978864	-5.5470081	82.1	-175.0	3.4	4.6	11.813	10.766	10.286	10.222	9.783	9.698	0.544	53.7	b
UPM 0314-0150	48.5090014	-1.8370214	114.2	-186.2	8.8	8.6	...	...	...	11.672	11.088	10.843	...	...	b
UPM 0314-0415	48.6207794	-4.2554964	145.6	-111.8	9.0	10.1	14.625	12.900	12.119	11.176	10.525	10.401	1.724	71.5	
UPM 0330-0047	52.7083053	-0.7902283	193.7	-15.3	3.3	6.2	15.120	14.071	13.434	13.066	12.604	12.561	1.005	[190.6]	b f
UPM 0356-0828	59.0545181	-8.4810458	3.7	-184.8	10.8	12.5	...	11.147	10.560	10.892	10.507	10.400	0.255	...	b
UPM 0358-1617	59.5358836	-16.2881436	184.6	-37.0	12.3	12.5	17.926	15.806	13.993	12.933	12.442	12.212	2.873	115.0	
UPM 0359-2449	59.8231094	-24.8298217	-105.0	-149.1	4.6	4.6	17.990	15.911	13.990	12.757	12.211	11.956	3.154	88.6	
UPM 0403-0635	60.7777225	-6.5860825	205.2	13.7	11.2	10.6	...	...	...	12.140	11.563	11.276	...	...	b
UPM 0405-1951	61.2543614	-19.8521608	34.8	-179.9	2.4	2.4	...	13.753	13.046	12.967	12.410	12.355	0.786	199.6	b c
UPM 0410-0742	62.6567331	-7.7134942	139.1	-175.2	11.8	10.8	15.766	13.474	11.071	10.642	10.054	9.770	2.832	37.0	
UPM 0413-4212	63.2980333	-42.2011461	145.8	124.2	3.3	3.1	...	...	...	12.229	11.632	11.368	...	...	b
UPM 0417-0431	64.3450542	-4.5310789	244.9	78.0	10.3	10.6	...	...	...	11.392	10.819	10.545	...	...	b
UPM 0424-0307	66.1372464	-3.1186994	133.7	-176.5	12.7	15.8	17.311	14.694	12.752	12.087	11.504	11.214	2.607	72.7	
UPM 0443-4129A	70.7825969	-41.4844111	186.1	4.3	3.6	3.8	14.948	12.775	10.462	10.422	9.846	9.594	2.353	39.3	a d
UPM 0446-4337	71.5897783	-43.6211606	59.2	171.3	3.6	1.7	12.496	11.113	10.479	11.096	10.602	10.500	0.017	...	b
UPM 0454-4217	73.5640600	-42.2886506	159.7	83.2	10.9	10.5	16.433	14.437	12.943	12.095	11.431	11.275	2.342	91.8	
UPM 0456-1138	74.1655053	-11.6350681	30.5	-250.8	11.5	11.3	17.224	15.471	13.518	12.269	11.716	11.471	3.202	74.7	
UPM 0502-1938	75.6838831	-19.6478917	54.4	172.2	4.0	2.8	16.562	14.733	12.874	11.574	10.917	10.641	3.159	48.8	
UPM 0507-1302	76.8394261	-13.0453781	184.1	-119.4	9.8	9.7	...	...	...	12.601	12.004	11.786	...	...	b
UPM 0508-0617	77.0132517	-6.2872236	170.4	-67.8	7.5	7.6	...	14.170	12.642	11.679	11.078	10.854	2.491	66.8	
UPM 0521-0448	80.2826481	-4.8134942	-20.5	-181.1	4.5	4.1	14.255	13.177	12.882	12.238	11.770	11.736	0.939	122.1	b
UPM 0527-2006	81.8761928	-20.1036386	25.6	-183.7	3.4	3.4	...	10.973	9.523	11.168	10.591	10.335	-0.195	60.1	a b
UPM 0528-4313A	82.0375869	-43.2255300	-75.6	164.7	4.0	4.0	16.795	14.566	12.807	11.889	11.312	11.067	2.677	70.4	d
UPM 0528-4313B	82.0298050	-43.2357586	-86.3	163.2	4.8	5.5	19.746	17.653	15.348	13.943	13.296	13.015	3.710	109.1	d e
UPM 0532-1458	83.2114242	-14.9684436	183.3	-28.1	10.2	10.2	16.626	14.662	12.946	12.145	11.623	11.410	2.517	95.2	
UPM 0534-1510	83.6021194	-15.1696369	177.5	-39.2	8.5	8.5	14.461	12.575	11.551	11.040	10.429	10.249	1.535	70.9	
UPM 0540-2757	85.0146869	-27.9660519	33.1	-120.7	3.6	3.7	18.317	16.303	14.451	13.494	12.946	12.753	2.809	154.1	a e
UPM 0542-4544	85.6736511	-45.7491522	64.1	183.2	4.3	7.9	15.664	13.488	11.376	10.453	9.854	9.586	3.035	30.9	
UPM 0545-0222	86.3577581	-2.3675183	-54.4	-189.2	10.0	10.1	...	...	...	12.424	11.861	11.617	...	...	b
UPM 0556-3937	89.0922544	-39.6272753	84.1	-206.8	4.7	5.6	...	...	...	13.607	13.063	12.885	...	...	b
UPM 0557-1351	89.2654756	-13.8644606	25.1	-181.4	5.6	3.7	...	...	...	11.038	10.475	10.205	...	...	b
UPM 0558-3745	89.7238911	-37.7586756	140.6	-115.6	3.9	5.8	...	...	...	11.662	11.035	10.785	...	...	b
UPM 0601-1512	90.4218800	-15.2024047	105.0	-157.1	7.5	5.2	14.492	12.684	11.569	11.484	10.841	10.682	1.200	91.1	
UPM 0602-1917	90.6749681	-19.2984797	-132.2	-172.6	10.4	10.4	15.906	13.961	12.074	11.323	10.858	10.519	2.638	60.7	
UPM 0603-1417	90.8013183	-14.2981833	-184.4	-12.4	4.5	10.7	...	...	...	11.711	11.092	10.805	...	...	b
UPM 0603-1433	90.8642300	-14.5603703	49.8	-195.9	3.6	3.6	...	...	...	12.090	11.491	11.327	...	...	b
UPM 0614-3350	93.6930136	-33.8383233	235.6	92.1	10.9	10.9	...	15.462	14.028	13.052	12.565	12.354	2.410	141.9	
UPM 0615-0735	93.9365817	-7.5865625	96.7	-156.9	11.5	13.3	...	16.025	14.794	13.709	13.130	12.892	2.316	178.1	
UPM 0620-0312	95.1532386	-3.2076081	-19.4	-204.3	10.5	10.9	16.634	14.530	...	12.965	12.383	12.177	1.565	[189.4]	f
UPM 0629-1737	97.4615906	-17.6326997	143.0	-130.9	6.4	9.5	...	...	...	12.895	12.363	12.198	...	...	b
UPM 0639-0451	99.9698181	-4.8652011	-229.8	121.5	7.5	7.6	16.020	13.918	12.144	11.205	10.624	10.385	2.713	52.0	

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 0641-0255	100.2841003	-2.9306503	-72.7	-167.6	18.7	11.4	...	...	...	11.551	10.989	10.716	...	...	b
UPM 0645-0045	101.2847811	-0.7658139	-168.9	-95.2	7.2	6.6	17.124	15.014	13.172	12.186	11.639	11.379	2.828	78.6	
UPM 0652-0150	103.0572631	-1.8487686	64.1	-174.4	1.4	2.2	13.647	11.537	10.484	11.121	10.480	10.334	0.416	76.3	b
UPM 0652-2243	103.2459989	-22.7292186	-83.2	169.2	2.8	3.2	...	14.509	12.303	11.303	10.719	10.419	3.206	43.4	
UPM 0655-0715	103.8760131	-7.2643236	61.7	-240.9	7.8	7.9	...	...	...	10.392	9.779	9.563	...	...	b
UPM 0659-0052A	104.8421303	-0.8801367	-58.3	-184.1	2.7	1.8	15.062	12.642	10.985	11.253	10.672	10.466	1.389	78.2	d
UPM 0659-0052B	104.8439419	-0.8835767	...	...	...	...	...	...	...	13.969	13.436	13.172	...	...	a b d e
UPM 0702-2053	105.5694072	-20.8837058	82.0	-169.4	8.2	9.3	...	...	...	12.524	11.899	11.691	...	...	b
UPM 0704-0602A	106.1883350	-6.0386081	...	...	...	...	...	12.488	11.140	12.557	11.932	11.758	-0.069	123.4	b a c d e
UPM 0704-0602B	106.1882444	-6.0352122	99.5	-153.0	5.0	5.0	...	14.488	13.710	11.284	10.723	10.499	3.204	37.8	d
UPM 0704-2033	106.1582275	-20.5532164	90.1	-158.2	10.3	10.1	17.435	15.252	13.485	12.546	12.008	11.769	2.706	98.2	
UPM 0705-2830	106.3123578	-28.5031700	-23.5	182.2	4.7	19.1	...	...	...	11.831	11.247	10.980	...	...	b
UPM 0706-2301	106.5726647	-23.0297381	-164.1	105.6	8.5	7.7	17.987	15.928	14.413	13.449	12.936	12.646	2.479	164.7	
UPM 0708-2539	107.2233878	-25.6601586	115.2	-144.9	13.0	17.3	...	...	...	12.311	11.694	11.461	...	...	b
UPM 0716-2342	109.2296050	-23.7101622	139.8	-113.7	9.7	9.5	...	15.025	12.960	12.396	11.860	11.611	2.629	98.8	
UPM 0724-0949	111.1639358	-9.8236900	-192.9	15.5	5.0	5.4	...	...	...	11.127	10.519	10.353	...	...	b
UPM 0725-0207	111.4631742	-2.1191361	-185.1	-14.9	5.0	5.0	...	...	...	11.251	10.700	10.483	...	...	b
UPM 0730-4042	112.7328597	-40.7005344	-237.6	113.1	7.4	7.0	...	...	...	10.452	9.848	9.609	...	...	b
UPM 0736-4256	114.0765108	-42.9425744	171.4	-62.3	14.4	12.4	...	15.719	14.674	13.476	12.860	12.698	2.243	164.2	
UPM 0740-2114	115.1509197	-21.2383561	-192.2	8.5	14.0	13.3	...	...	...	12.420	11.875	11.621	...	...	b
UPM 0740-3055	115.1015369	-30.9323542	-235.9	96.7	7.7	7.8	...	...	...	12.146	11.616	11.364	...	...	b
UPM 0742-2501	115.5580681	-25.0244169	176.9	49.8	9.7	9.7	...	...	...	11.848	11.231	10.983	...	...	b
UPM 0745-4149	116.2558594	-41.8251314	-89.8	159.3	2.2	2.4	...	14.674	13.178	12.175	11.583	11.358	2.499	83.7	
UPM 0746-3729	116.5312928	-37.4876147	11.2	-182.4	4.4	4.2	...	...	...	12.527	11.994	11.710	...	...	b c
UPM 0747-0320	116.8618994	-3.3466481	-158.2	89.5	7.0	7.6	...	14.709	12.737	11.930	11.345	11.126	2.779	71.9	
UPM 0747-2537A	116.9783592	-25.6193264	-148.5	101.9	4.2	2.1	...	9.801	8.849	9.593	8.958	8.814	0.208	40.6	b d
UPM 0747-2537B	116.9752431	-25.6211242	-151.3	102.3	3.5	3.5	...	13.947	13.441	11.500	10.965	10.741	2.447	47.3	d
UPM 0748-0619	117.1063369	-6.3225081	109.8	-155.9	6.1	6.2	...	...	...	10.356	9.749	9.579	...	...	b
UPM 0750-1807	117.5875447	-18.1294489	-182.7	45.5	7.0	6.3	...	...	...	12.248	11.756	11.471	...	...	b
UPM 0751-0214	117.7670006	-2.2466175	9.8	-211.2	13.9	11.7	...	...	...	12.186	11.708	11.441	...	...	b
UPM 0752-0751	118.0258133	-7.8544356	12.8	-195.6	5.9	5.9	...	...	...	10.377	9.794	9.516	...	...	b
UPM 0752-1602	118.1642550	-16.0351689	-86.0	-193.7	7.3	7.5	...	...	...	11.770	11.214	10.983	...	...	b
UPM 0800-0617A	120.2021822	-6.2902914	135.2	-233.8	9.0	9.4	...	14.669	...	12.944	12.321	12.176	1.725	[175.5]	b d f
UPM 0800-0617B	120.2007742	-6.2896208	...	...	...	...	...	...	...	14.720	14.193	13.983	...	...	a b d e
UPM 0801-1005	120.4445300	-10.0905344	177.8	-90.1	3.8	6.2	...	...	...	9.969	9.388	9.154	...	...	b
UPM 0801-4347	120.4321706	-43.7879044	-100.9	158.0	3.6	3.4	14.186	11.870	10.471	10.146	9.546	9.327	1.724	44.4	
UPM 0802-2010	120.6659497	-20.1753642	191.5	-210.6	7.7	7.7	...	...	...	11.925	11.310	11.141	...	...	b
UPM 0803-4518	120.7579836	-45.3141208	49.4	199.4	3.3	3.3	...	...	...	11.645	11.109	10.813	...	...	b
UPM 0805-3827	121.3922181	-38.4596086	153.3	-151.8	6.6	6.2	...	...	...	12.108	11.584	11.251	...	...	b
UPM 0807-0121	121.8875364	-1.3593131	-178.8	94.3	10.2	10.5	...	...	...	11.071	10.473	10.277	...	...	b
UPM 0807-0930	121.8525969	-9.5078494	197.5	32.8	3.9	12.3	13.602	11.228	9.767	9.758	9.148	8.921	1.470	38.5	
UPM 0807-2025	121.8779764	-20.4218667	110.5	-144.7	3.0	3.0	...	...	...	10.948	10.335	10.137	...	...	b
UPM 0808-0943	122.0687272	-9.7311883	98.7	-173.6	4.5	3.6	14.522	12.217	10.408	10.195	9.679	9.442	2.022	43.2	
UPM 0809-0943	122.2784283	-9.7207692	147.0	-157.5	8.1	7.0	15.935	13.769	12.187	11.895	11.357	11.154	1.874	101.9	
UPM 0809-4519	122.4626147	-45.3295575	204.4	-10.1	12.6	12.6	...	...	...	10.236	9.686	9.446	...	...	b
UPM 0813-0429	123.3408675	-4.4854875	-32.9	225.8	8.2	9.0	...	15.922	...	13.271	12.743	12.499	2.651	137.2	b
UPM 0813-1048	123.3918000	-10.8166544	-147.7	-139.7	10.7	10.8	17.723	15.527	13.202	12.094	11.610	11.292	3.433	58.5	
UPM 0813-4604	123.2772747	-46.0709556	-76.9	168.7	3.0	3.1	15.131	13.421	11.180	10.955	10.281	10.073	2.466	53.7	
UPM 0814-0835	123.6868333	-8.5917794	-221.5	113.0	7.4	6.7	...	...	...	11.087	10.481	10.297	...	...	b
UPM 0814-3645	123.7166631	-36.7522964	-80.9	-167.1	10.2	4.1	...	...	...	11.660	11.150	10.963	...	...	b
UPM 0815-3058	123.7880314	-30.9746633	-170.6	205.9	6.1	6.2	...	...	11.245	11.346	10.782	10.473	...	...	b
UPM 0821-1452	125.3709208	-14.8695183	-22.6	-183.9	3.6	5.5	12.697	...	...	10.073	9.481	9.376	...	...	b
UPM 0821-4626	125.4251800	-46.4334139	-73.3	166.4	3.3	3.3	15.017	13.307	11.553	11.528	10.980	10.748	1.779	82.2	b
UPM 0826-3942	126.5266758	-39.7096897	-98.3	196.1	6.2	6.3	...	...	...	10.745	10.153	9.911	...	...	b
UPM 0828-1438	127.0004200	-14.6352944	-166.9	87.9	8.4	5.0	...	...	...	12.204	11.541	11.285	...	...	b
UPM 0832-3942	128.0769122	-39.7043753	224.2	4.0	14.0	13.9	18.269	16.870	14.829	13.047	12.517	12.256	3.823	87.7	
UPM 0836-0059	129.0747936	-0.9920019	109.8	-147.3	6.8	6.7	15.555	13.318	11.750	10.932	10.342	10.051	2.386	49.2	
UPM 0838-3247	129.6943083	-32.7966136	-106.7	147.5	4.6	3.9	...	14.149	12.693	12.312	11.637	11.492	1.837	115.5	
UPM 0840-3641	130.0511394	-36.6993433	-173.6	49.8	4.9	3.8	...	...	...	11.154	10.611	10.320	...	...	b c
UPM 0840-4437	130.1662658	-44.6211017	-84.9	161.1	2.2	2.2	...	12.483	11.812	11.471	11.056	11.013	1.012	106.9	b
UPM 0842-0302	130.6869978	-3.0436728	51.0	-176.8	7.3	7.3	...	15.299	13.728	12.879	12.353	12.126	2.420	128.1	
UPM 0842-0907	130.5108458	-9.1258817	130.2	-126.5	7.0	7.2	...	...	...	10.276	9.675	9.407	...	...	b
UPM 0842-4532	130.7227961	-45.5387481	-151.7	98.1	6.7	4.4	...	...	...	12.610	12.124	11.903	...	...	b
UPM 0843-3209	130.9895922	-32.1573656	-165.4	76.0	3.2	2.6	15.446	13.483	12.412	11.449	10.860	10.650	2.034	77.5	

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 0846-2639	131.5501986	-26.6632953	-136.2	122.8	2.5	2.6	...	...	11.530	11.086	10.434	10.236	...	62.3	b
UPM 0848-2542	132.1816267	-25.7036467	-181.8	7.0	1.8	6.2	...	13.801	12.021	11.335	10.765	10.529	2.466	61.3	
UPM 0850-3052	132.6042867	-30.8716572	73.5	-167.7	5.9	3.8	17.121	14.799	13.286	12.239	11.726	11.439	2.560	86.4	
UPM 0856-1741	134.0761817	-17.6836933	-124.7	134.3	1.7	2.9	17.414	15.472	13.932	12.293	11.719	11.460	3.179	69.5	
UPM 0856-2909	134.0409614	-29.1542111	255.3	2.9	9.1	8.8	...	...	...	11.988	11.453	11.215	...	...	b
UPM 0900-4308	135.2269369	-43.1379197	-177.1	38.5	3.9	2.1	...	15.782	13.872	12.083	11.549	11.323	3.699	47.7	
UPM 0913-4303	138.2865189	-43.0630097	-167.0	78.6	3.8	4.0	...	...	...	12.673	12.118	11.868	...	...	b
UPM 0919-3821	139.7869492	-38.3544064	181.0	-27.6	10.7	5.2	18.201	16.059	13.594	12.398	11.839	11.577	3.661	60.3	
UPM 0923-2518	140.8532544	-25.3069511	-174.6	66.3	5.1	5.0	18.212	16.305	14.672	13.104	12.527	12.241	3.201	99.2	
UPM 0934-4355	143.5423842	-43.9186631	-178.6	-36.3	6.1	4.5	...	15.225	12.743	11.673	11.138	10.879	3.552	49.2	
UPM 0936-4557	144.2119747	-45.9659628	-175.8	51.4	3.4	3.3	12.959	11.119	9.990	9.830	9.194	9.028	1.289	41.8	
UPM 0937-0014	144.4922225	-0.2380892	-186.6	-52.5	6.9	7.1	17.167	15.231	14.180	13.184	12.723	12.483	2.047	184.6	
UPM 0937-3214	144.4728728	-32.2365067	-92.6	155.7	3.6	3.4	...	15.513	14.370	13.263	12.703	12.492	2.250	152.5	
UPM 0940-3918	145.0291622	-39.3121189	-75.3	164.2	6.9	6.9	...	13.681	11.832	11.519	10.957	10.738	2.162	76.4	
UPM 0941-4439	145.3561000	-44.6615028	-203.9	-71.1	11.3	11.0	...	15.616	13.837	12.855	12.327	12.069	2.761	109.0	
UPM 0941-4518	145.3343672	-45.3073242	-174.8	89.0	10.9	6.3	...	...	...	11.682	11.132	10.884	...	...	b
UPM 0948-4147	147.2015628	-41.7863742	-245.0	-69.8	8.4	8.2	...	...	...	10.646	10.069	9.803	...	...	b
UPM 0951-4429	147.7806564	-44.4948356	-143.8	109.8	3.5	2.1	16.883	14.919	12.584	11.698	11.158	10.966	3.221	58.8	
UPM 0956-0940	149.2293078	-9.6741689	-192.7	-24.4	2.5	2.0	14.329	...	10.369	10.191	9.584	9.352	...	43.6	
UPM 1003-2717	150.9001517	-27.2959828	-274.6	-39.5	10.7	10.2	...	...	...	10.565	10.007	9.712	...	...	b
UPM 1006-1144	151.5145706	-11.7484167	66.9	-170.5	2.0	2.0	13.619	11.759	10.923	11.193	10.586	10.439	0.566	90.8	b
UPM 1009-0501B	152.4402375	-5.0217161	-190.5	92.1	7.4	7.2	...	...	...	12.645	12.105	11.889	...	...	b d
UPM 1011-4235	152.9185411	-42.5901381	-178.6	-25.9	2.8	2.8	15.694	13.413	...	11.073	10.461	10.227	2.340	54.9	
UPM 1015-0859	153.8675097	-8.9998406	-151.3	101.4	2.0	2.0	14.108	12.279	11.435	10.688	10.044	9.917	1.591	59.7	
UPM 1020-0633A	155.2034769	-6.5554489	-179.8	-27.8	7.3	7.2	16.023	13.625	11.335	10.670	10.073	9.809	2.955	34.8	d
UPM 1020-0642	155.0026631	-6.7037208	-211.0	70.6	7.6	7.6	16.635	14.687	12.883	11.920	11.350	11.148	2.767	75.2	
UPM 1024-0317	156.1723939	-3.2861519	-143.2	-126.3	7.9	7.9	16.780	14.686	12.708	11.846	11.276	11.025	2.840	67.0	
UPM 1030-2400	157.5368944	-24.0092022	-164.3	76.2	4.0	2.0	16.458	14.603	12.580	11.291	10.690	10.449	3.312	42.7	
UPM 1031-0024A	157.7905397	-0.4118389	-207.4	-105.6	11.4	10.3	14.016	11.944	10.371	10.561	10.048	9.747	1.383	55.1	b d
UPM 1031-0024B	157.7925844	-0.4118883	-142.5	-96.9	6.3	6.3	...	...	...	...	...	...	...	...	b d e
UPM 1041-3913	160.2807536	-39.2238969	38.1	-182.1	1.6	14.5	14.487	12.444	11.094	10.148	9.600	9.347	2.296	38.6	
UPM 1044-2414	161.2433072	-24.2419103	-178.9	57.3	11.1	9.2	16.647	14.667	13.149	12.003	11.441	11.199	2.664	78.4	
UPM 1046-3046	161.5409683	-30.7693019	-84.2	-159.9	3.6	3.6	...	...	...	12.983	12.405	12.164	...	...	b
UPM 1048-1538	162.1992581	-15.6490136	-177.7	42.4	3.3	4.4	17.396	15.382	13.938	13.043	12.412	12.221	2.339	141.8	
UPM 1056-0542A	164.1791192	-5.7066733	-98.1	-173.8	8.2	8.3	15.970	14.281	12.816	11.682	11.141	10.939	2.599	76.5	d
UPM 1056-0542B	164.1816494	-5.7064783	-63.9	-173.3	4.4	4.1	...	...	...	12.485	11.963	11.709	...	...	b d e
UPM 1058-4441	164.5727686	-44.6861050	-168.3	66.0	9.8	4.2	...	16.249	15.218	13.872	13.176	13.037	2.377	175.5	
UPM 1059-0020	164.9792050	-0.3418581	102.1	-152.1	2.9	5.0	...	11.771	...	10.356	9.748	9.586	1.415	57.3	b
UPM 1059-3022	164.7671950	-30.3801764	-174.6	59.9	2.1	2.1	12.886	11.393	10.988	10.299	9.826	9.725	1.094	50.7	b
UPM 1108-0644	167.1859397	-6.7383533	-205.9	-1.5	8.7	8.5	14.710	12.648	11.392	10.927	10.290	10.088	1.721	65.0	
UPM 1109-1032	167.3681956	-10.5479519	-162.3	89.0	10.1	10.1	17.490	15.334	13.246	12.484	11.943	11.663	2.850	89.5	
UPM 1113-0113	168.3352431	-1.2199069	-184.6	23.4	10.5	10.0	17.881	15.813	14.194	12.982	12.530	12.253	2.831	119.8	
UPM 1113-0148	168.3518608	-1.8163381	-174.3	-64.9	7.4	11.6	17.348	15.208	13.359	12.395	11.858	11.551	2.813	84.9	
UPM 1122-4530	170.6087600	-45.5091333	-179.3	-29.6	1.9	1.9	17.065	15.177	12.936	11.666	11.061	10.816	3.511	46.4	
UPM 1130-1622	172.5409028	-16.3801233	-200.6	57.3	6.6	7.0	17.842	15.713	14.155	13.372	12.854	12.562	2.341	166.1	a
UPM 1131-0725	172.9437592	-7.4266169	-195.6	-5.9	9.9	9.5	14.975	13.881	13.264	13.077	12.616	12.538	0.804	194.3	b
UPM 1133-2302	173.3741581	-23.0458669	-191.9	0.6	1.7	1.7	16.127	14.100	12.923	12.523	11.928	11.745	1.577	145.4	
UPM 1136-0525	174.1784361	-5.4211494	158.0	-140.2	13.6	13.5	17.294	15.429	13.996	12.813	12.249	11.989	2.616	117.1	
UPM 1138-4553	174.6189286	-45.8979317	-191.9	1.9	3.8	2.5	16.204	14.087	12.336	11.305	10.616	10.411	2.782	49.2	
UPM 1142-2055A	175.5808186	-20.9279653	-186.7	44.2	2.4	2.5	14.178	11.408	10.020	10.028	9.348	9.172	1.380	41.2	d
UPM 1142-2055B	175.5814128	-20.9302367	...	...	...	...	...	...	...	12.223	11.647	11.370	...	...	a b d e
UPM 1143-4443	175.8747928	-44.7271675	-191.0	2.6	5.1	4.0	18.119	16.055	14.341	12.943	12.399	12.169	3.112	99.0	
UPM 1149-0019B	177.2613256	-0.3233508	-201.5	2.2	6.8	3.2	...	...	...	9.963	9.345	9.145	...	...	b d
UPM 1153-1747	178.3206078	-17.7875069	-186.5	-58.7	1.3	1.3	15.381	13.160	11.557	10.957	10.352	10.110	2.203	55.0	
UPM 1158-0912	179.6672408	-9.2024986	-189.9	52.2	9.2	9.4	16.060	14.074	12.342	11.466	10.893	10.655	2.608	63.3	
UPM 1159-0339	179.9315281	-3.6635244	-36.4	-193.0	12.2	13.0	...	15.447	13.581	12.770	12.177	11.932	2.677	106.6	
UPM 1159-3623A	179.9150078	-36.3841397	-182.1	-101.4	12.7	13.1	...	15.642	14.060	12.934	12.402	12.169	2.708	113.1	d
UPM 1159-3623B	179.9110964	-36.3820372	-172.6	-92.4	8.4	6.5	...	18.260	16.344	14.447	14.007	13.646	3.813	132.4	d e
UPM 1202-0625	180.5348450	-6.4258914	87.6	-161.6	5.7	7.2	14.976	12.697	11.068	10.489	9.857	9.595	2.208	42.5	
UPM 1203-0053	180.8805247	-0.8924633	-208.2	-4.3	7.3	3.9	...	14.348	13.979	13.036	12.618	12.547	1.312	[183.7]	b f
UPM 1206-1851	181.5521064	-18.8579533	-190.4	-26.2	5.6	5.9	...	15.193	14.577	13.870	13.261	13.128	1.323	[255.4]	f
UPM 1208-0904	182.0832711	-9.0831478	-202.5	129.8	9.2	9.0	16.076	13.897	...	12.038	11.475	11.253	1.859	113.1	
UPM 1209-0721	182.4658233	-7.3607258	-185.8	7.3	9.5	9.4	...	...	...	11.706	11.107	10.926	...	...	b
UPM 1214-4016	183.6045086	-40.2807997	-180.5	3.8	14.4	2.7	...	...	...	11.455	10.789	10.516	...	...	b

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 1217-1032	184.2883256	-10.5362844	-141.8	-116.8	6.0	4.4	17.627	15.433	13.371	12.421	11.834	11.602	3.012	79.2	
UPM 1219-0238	184.8517200	-2.6367969	-63.6	-186.1	5.0	3.5	15.593	14.171	13.591	13.297	12.765	12.675	0.874	204.3	b
UPM 1223-1757	185.8103789	-17.9516678	-183.7	56.5	3.3	2.4	...	14.157	12.414	11.911	11.341	11.106	2.246	87.1	
UPM 1223-2947	185.9150278	-29.7938564	-158.1	97.2	2.5	2.5	16.417	14.610	12.933	11.803	11.181	10.935	2.807	66.8	
UPM 1226-2020A	186.6684756	-20.3442347	-137.6	-119.8	8.0	14.1	13.216	11.819	11.024	10.896	10.327	10.198	0.923	72.3	b d
UPM 1226-2020B	186.6675500	-20.3425083	-146.3	-117.3	5.6	5.7	...	...	...	13.457	12.901	12.690	...	...	b d e
UPM 1226-3516B	186.6989514	-35.2778583	-200.5	38.3	7.0	5.2	19.238	17.467	15.558	13.823	13.303	13.082	3.644	127.5	d e
UPM 1226-3516C	186.7202739	-35.2868633	-115.2	8.5	7.7	6.1	19.891	18.036	16.387	14.792	14.321	14.107	3.244	243.4	a d e
UPM 1229-3351	187.4657011	-33.8588425	-276.0	-141.9	15.2	15.2	17.955	16.382	...	13.235	12.747	12.476	3.147	129.1	
UPM 1230-0436	187.7377119	-4.6000967	56.9	-175.8	3.4	3.2	15.575	13.562	11.944	11.098	10.568	10.359	2.464	59.1	
UPM 1230-0439	187.5189581	-4.6604111	-155.7	105.0	4.8	4.5	16.484	14.340	12.884	11.915	11.353	11.065	2.425	78.8	
UPM 1230-1444	187.6268586	-14.7465403	-192.9	28.8	2.1	2.3	15.721	14.376	13.613	13.446	12.910	12.826	0.930	244.1	b
UPM 1232-0322	188.0907006	-3.3744908	-126.2	-141.1	14.5	7.9	17.217	14.989	13.389	12.279	11.703	11.451	2.710	81.8	
UPM 1232-4612	188.1934892	-46.2156881	-181.0	-67.6	2.7	2.7	...	...	...	11.123	10.578	10.303	...	...	b c
UPM 1234-0023	188.5658922	-0.3942053	-159.8	-94.0	1.9	3.6	...	...	12.901	12.589	12.062	11.998	...	148.2	b
UPM 1235-0331	188.8826600	-3.5177714	-132.6	-124.9	8.4	8.1	...	...	13.529	13.101	12.480	12.423	...	174.8	b
UPM 1237-2708	189.4098558	-27.1349803	-165.6	-89.2	18.4	5.4	...	...	...	10.255	9.641	9.414	...	...	b
UPM 1238-0038	189.7220656	-0.6494094	-50.5	-210.9	7.5	7.4	16.055	14.536	13.893	13.547	13.009	12.833	0.989	217.0	b
UPM 1239-2521	189.9172039	-25.3574425	-131.8	-125.4	1.0	0.9	12.470	11.395	10.838	10.671	10.251	10.189	0.724	66.7	b
UPM 1240-1232	190.1730197	-12.5345394	-172.3	-54.7	3.4	3.5	17.309	14.763	...	11.828	11.189	10.977	2.935	52.3	
UPM 1243-0333	190.8523322	-3.5658900	-55.5	-171.6	13.7	13.0	...	16.023	14.247	13.040	12.509	12.241	2.983	104.4	
UPM 1246-3423	191.7417556	-34.3920336	-182.1	10.0	6.5	9.4	17.930	15.820	14.086	12.864	12.270	12.097	2.956	101.8	
UPM 1250-3103	192.7028144	-31.0625358	-182.0	-16.8	1.5	1.4	16.080	14.009	12.308	11.528	10.821	10.633	2.481	63.0	
UPM 1254-0633	193.6115931	-6.5503981	-183.5	50.8	7.4	7.2	16.847	14.677	13.142	12.012	11.460	11.202	2.665	75.6	
UPM 1255-0123	193.9155961	-1.3989186	-162.8	77.8	7.5	7.6	15.737	13.545	12.313	11.503	10.919	10.741	2.042	78.7	
UPM 1255-0201	193.9661833	-2.0191072	-178.6	-59.1	7.7	7.9	14.210	12.182	11.223	10.337	9.752	9.539	1.845	48.9	
UPM 1301-2002	195.2599392	-20.0495206	-186.6	-1.2	2.0	2.3	16.066	13.927	12.307	11.773	11.085	10.872	2.154	79.5	
UPM 1302-1739	195.5729917	-17.6554925	66.6	-168.0	4.3	4.3	...	14.986	13.042	12.419	11.829	11.567	2.567	96.0	
UPM 1303-0529	195.7612992	-5.4846467	-182.4	32.7	13.2	12.6	17.727	15.728	13.900	12.816	12.321	12.085	2.912	109.1	
UPM 1305-0509	196.4285619	-5.1588822	-184.2	-24.3	5.9	4.9	14.155	13.390	12.892	12.725	12.392	12.321	0.665	178.0	b
UPM 1305-1023	196.3293772	-10.3901519	-146.7	104.8	3.9	4.8	13.943	11.997	11.040	10.876	10.238	10.101	1.121	68.8	
UPM 1311-4557	197.8996369	-45.9601217	-170.7	-71.8	14.0	7.3	...	15.818	13.636	12.716	12.123	11.900	3.102	91.1	
UPM 1313-4112	198.3192592	-41.2098522	-20.5	208.9	11.3	11.2	...	...	...	11.363	10.788	10.487	...	...	b
UPM 1314-0453	198.6887014	-4.8900147	94.2	-153.5	9.5	9.2	17.647	15.646	13.948	12.364	11.732	11.523	3.282	67.0	
UPM 1315-0157	198.9190489	-1.9517944	-180.4	-21.2	9.9	9.9	17.456	15.511	13.763	12.417	11.920	11.672	3.094	82.8	
UPM 1315-2904A	198.9894239	-29.0780553	-190.6	-27.5	16.7	23.5	18.025	15.871	14.281	12.758	12.274	11.988	3.113	89.6	d
UPM 1315-2904B	198.9885206	-29.0765469	-209.7	-1.5	12.8	11.1	20.271	17.824	15.971	14.325	13.751	13.613	3.499	149.3	d e
UPM 1318-3910	199.5230214	-39.1766283	-148.1	-115.5	4.5	4.5	18.164	16.073	14.089	12.549	11.947	11.661	3.524	63.1	
UPM 1323-3009	200.8448642	-30.1521306	-134.2	-125.7	3.5	3.8	17.704	15.816	14.100	13.061	12.557	12.291	2.755	130.2	
UPM 1323-4541	200.7692875	-45.6888108	-179.7	46.3	6.1	4.9	17.679	15.619	13.966	12.586	11.936	11.747	3.033	82.2	
UPM 1324-2631	201.2206433	-26.5186122	-120.6	-140.9	4.0	2.2	16.723	14.650	13.048	11.813	11.228	10.997	2.837	64.5	
UPM 1327-4606	201.8371664	-46.1093275	-179.2	-25.0	6.3	6.6	18.233	16.153	14.141	12.751	12.173	11.906	3.402	76.2	
UPM 1329-3729	202.4278942	-37.4868347	-174.5	-67.1	2.8	6.8	17.777	15.655	13.751	12.475	11.882	11.606	3.180	72.3	
UPM 1331-1706	202.8177619	-17.1053169	-152.4	-103.8	8.8	8.8	13.616	11.668	10.400	10.293	9.600	9.397	1.375	48.2	
UPM 1335-1706	203.9090931	-17.1108244	-170.3	83.7	3.9	6.3	17.345	15.345	13.960	12.976	12.380	12.125	2.369	134.0	
UPM 1337-0155	204.2700961	-1.9167561	-204.1	-165.2	11.0	11.3	16.263	14.421	12.192	10.983	10.497	10.223	3.438	38.3	
UPM 1338-1459	204.7328261	-14.9929269	-180.8	6.1	8.5	8.7	14.357	12.632	11.951	11.520	10.912	10.801	1.112	94.7	
UPM 1343-0220	205.9086011	-2.3335592	-144.7	128.3	5.1	4.4	14.009	11.642	10.754	10.064	9.431	9.219	1.578	43.4	
UPM 1343-3728	205.9051978	-37.4830681	-132.3	-132.2	3.7	3.4	18.097	15.807	14.010	12.689	12.118	11.856	3.118	80.8	
UPM 1344-0757	206.1694717	-7.9526650	-21.2	-186.8	13.0	12.9	17.328	15.072	12.915	12.111	11.585	11.300	2.961	71.2	
UPM 1346-2111B	206.7059456	-21.1849233	-112.1	-60.0	6.6	5.7	18.343	16.407	14.513	13.004	12.414	12.148	3.403	86.8	a d e
UPM 1347-0042	206.8132836	-0.7141892	-209.1	50.0	11.3	11.1	16.141	14.211	12.183	10.993	10.425	10.156	3.218	38.7	
UPM 1349-4228	207.2552625	-42.4784189	-161.9	-84.6	1.3	3.0	14.468	11.703	...	9.449	8.863	8.622	2.254	24.4	
UPM 1349-4603	207.4748908	-46.0662628	-171.7	-66.6	2.4	3.5	16.545	14.507	12.621	11.706	11.099	10.819	2.801	61.3	
UPM 1350-2538	207.5852117	-25.6338006	-126.3	-130.5	2.3	2.9	17.261	15.147	13.177	11.576	11.033	10.753	3.571	41.2	
UPM 1355-2724	208.7766217	-27.4151128	-180.6	-12.6	1.4	1.2	15.733	13.991	13.089	12.058	11.411	11.310	1.933	110.2	
UPM 1355-3547	208.9479931	-35.7875306	-148.0	-118.6	2.6	19.8	...	...	...	11.689	11.076	10.853	...	...	b
UPM 1412-3518	213.1385153	-35.3079467	-177.6	-39.0	2.1	3.8	17.023	14.997	13.834	12.895	12.301	12.085	2.102	145.3	
UPM 1413-0615	213.4542447	-6.2657081	-205.7	-9.9	18.1	6.5	14.141	12.262	11.387	11.476	10.845	10.750	0.786	103.0	b
UPM 1413-2727	213.4797344	-27.4651342	-173.9	-51.0	1.2	1.5	...	14.874	14.198	13.268	12.728	12.647	1.606	[205.3]	f
UPM 1426-3807	216.7439033	-38.1297039	-173.8	59.9	3.3	3.3	17.549	15.605	13.932	12.591	12.052	11.855	3.014	92.7	
UPM 1433-1006	218.2923342	-10.1017839	-178.4	-34.4	3.9	3.7	17.319	15.500	14.052	13.008	12.426	12.204	2.492	138.0	
UPM 1440-1216	220.0069028	-12.2808661	-95.2	-154.7	2.1	2.1	...	...	...	10.770	10.118	9.951	...	...	b
UPM 1440-2346	220.0484783	-23.7699506	-166.3	-81.9	6.1	5.5	18.074	15.948	14.523	12.990	12.405	12.171	2.958	102.3	

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 1443-1350	220.7918803	-13.8418344	-132.3	-123.7	8.4	8.2	16.306	14.202	12.724	12.002	11.453	11.244	2.200	96.2	
UPM 1443-3318	220.8361869	-33.3092458	-169.7	-65.4	2.6	1.8	···	13.706	11.765	11.365	10.778	10.538	2.341	65.6	
UPM 1444-1414	221.1479233	-14.2457728	-110.5	-155.5	7.7	5.7	···	···	11.465	10.983	10.424	10.194	···	61.4	b
UPM 1445-4228	221.4660325	-42.4748283	-160.6	-90.7	7.4	7.5	16.627	14.542	13.149	12.083	11.525	11.310	2.459	88.6	
UPM 1447-2307	221.8288436	-23.1260342	-169.5	68.6	3.9	3.3	17.332	15.364	13.932	12.472	11.945	11.733	2.892	91.3	
UPM 1449-2906	222.4226139	-29.1078767	-184.3	-32.6	1.9	1.7	16.131	13.917	12.176	11.357	10.700	10.475	2.560	55.6	
UPM 1451-2451	222.9401378	-24.8589333	126.6	-131.3	1.6	1.6	16.739	14.847	13.100	11.702	11.110	10.884	3.145	55.3	
UPM 1453-4446	223.4601097	-44.7760186	-204.1	-63.0	19.9	25.5	14.117	12.089	10.891	10.938	10.262	10.120	1.151	69.6	g
UPM 1454-3423	223.5418183	-34.3933181	-227.7	-119.4	14.0	13.6	···	···	···	13.049	12.497	12.336	···	···	b
UPM 1456-3806	224.1946236	-38.1156314	-174.1	52.7	3.1	2.1	13.065	11.263	10.578	10.002	9.379	9.216	1.261	46.1	
UPM 1456-4218	224.1659378	-42.3046658	-220.1	-37.0	7.1	7.8	15.332	13.396	11.931	10.866	10.258	10.035	2.530	48.5	
UPM 1457-0555	224.4482581	-5.9233250	-115.2	-179.5	9.0	8.7	17.059	15.107	13.937	13.015	12.418	12.184	2.092	154.0	
UPM 1504-0235	226.2061903	-2.5983772	-22.5	-194.4	9.3	9.5	16.692	14.908	14.139	13.546	12.938	12.775	1.362	[234.4]	f
UPM 1506-4504	226.5962444	-45.0685394	-151.5	-119.5	8.6	10.8	16.934	15.119	13.136	12.013	11.368	11.151	3.106	65.1	
UPM 1509-1356	227.3431372	-13.9350375	-200.2	28.8	9.2	8.8	···	14.921	12.843	11.865	11.280	11.034	3.056	60.9	
UPM 1514-0519	228.6674336	-5.3324128	-148.8	-106.8	9.7	9.5	13.534	12.904	12.538	12.494	12.211	12.190	0.410	169.1	b
UPM 1514-0712	228.7084150	-7.2062508	-168.0	-75.5	6.4	7.2	13.339	11.338	10.441	9.950	9.295	9.178	1.388	44.3	
UPM 1516-2731	229.0559556	-27.5278219	-131.4	-129.1	4.8	4.7	17.417	15.647	13.761	12.139	11.608	11.364	3.508	61.2	
UPM 1525-4622	231.3542089	-46.3688022	-181.0	-151.9	6.3	5.8	···	···	···	12.271	11.915	11.824	···	···	b g
UPM 1529-0707	232.3161231	-7.1222567	-181.5	-61.1	9.7	9.5	13.142	12.257	11.859	11.709	11.387	11.321	0.548	112.6	b
UPM 1532-2833	233.0121631	-28.5547736	-20.5	-132.9	7.1	6.7	19.359	17.550	15.606	13.724	13.168	12.897	3.826	104.9	a e
UPM 1532-2834	233.0302039	-28.5679217	-120.7	-24.6	7.7	7.3	19.707	17.755	15.689	13.749	13.193	12.916	4.006	94.7	a e
UPM 1533-0251	233.4913458	-2.8522467	56.7	-179.0	10.2	10.9	13.565	12.658	11.989	11.098	10.676	10.588	1.560	77.8	
UPM 1533-2126	233.3307392	-21.4486364	-171.6	-68.5	2.2	2.1	14.692	12.723	11.510	11.830	11.200	10.980	0.893	97.6	b c
UPM 1534-3744	233.7133039	-37.7359719	-31.5	-260.7	16.1	14.4	17.894	15.895	14.857	13.171	12.605	12.408	2.724	130.8	
UPM 1535-1652	233.8295736	-16.8676697	-5.0	-239.3	14.7	14.3	17.677	15.648	13.758	12.655	12.135	11.875	2.993	94.0	
UPM 1536-2307	234.0091364	-23.1279594	-162.8	78.1	9.0	9.2	17.168	15.250	13.539	11.960	11.442	11.192	3.290	60.2	
UPM 1542-4520	235.5850419	-45.3483308	-130.8	-130.5	5.0	5.0	···	···	···	11.572	10.999	10.746	···	···	b
UPM 1546-2553	236.6958903	-25.8843933	-159.9	-135.9	8.8	9.0	···	···	···	11.478	10.909	10.700	···	···	b
UPM 1548-2228	237.1036078	-22.4715383	-103.0	-151.7	14.2	4.1	16.985	15.801	14.246	12.667	12.144	11.938	3.134	107.0	
UPM 1551-0438	237.8945833	-4.6492825	-226.5	-3.9	8.7	8.9	16.552	15.226	13.429	11.657	11.074	10.847	3.569	51.3	
UPM 1551-1335	237.9823981	-13.5938706	-269.4	-96.6	12.3	14.4	17.386	15.241	13.040	12.180	11.646	11.376	3.061	72.1	
UPM 1552-1033	238.0100178	-10.5601664	-13.0	-184.1	8.8	9.6	16.537	14.730	13.454	12.042	11.431	11.245	2.688	80.5	
UPM 1552-1511	238.1625247	-15.1866033	-272.3	-209.5	11.8	12.2	14.647	13.024	13.305	12.638	11.919	11.698	0.386	107.4	b
UPM 1552-3825	238.2234847	-38.4229861	-58.0	-177.4	4.8	4.8	14.200	12.733	12.214	11.750	11.166	11.067	0.983	92.9	b
UPM 1553-0244	238.2634961	-2.7434919	-36.1	-176.6	5.8	17.9	15.437	13.462	11.798	10.683	10.149	9.892	2.779	41.4	
UPM 1600-0137	240.0560244	-1.6199883	67.4	-178.8	19.8	4.9	···	···	···	9.820	9.247	8.981	···	···	b
UPM 1605-0010	241.3375458	-0.1716083	-197.4	-64.0	8.3	8.5	17.541	15.676	14.006	12.518	11.979	11.736	3.158	82.7	
UPM 1606-3534	241.5239356	-35.5674578	-175.1	-51.7	2.4	2.2	15.487	13.696	12.562	10.799	10.175	9.954	2.897	40.1	
UPM 1607-2307	241.8580489	-23.1169094	-145.2	-133.7	20.8	5.3	16.383	14.608	12.686	11.766	11.127	10.854	2.842	64.3	
UPM 1609-4639	242.2884686	-46.6565003	-140.9	-196.7	6.6	6.6	···	16.743	15.550	13.013	12.434	12.241	3.730	67.3	
UPM 1610-0227	242.7059622	-2.4608150	-9.3	-186.0	8.9	8.2	17.288	15.364	14.344	12.667	12.074	11.838	2.697	102.0	
UPM 1614-4033	243.6298703	-40.5574253	-128.0	-138.4	5.2	4.3	17.591	16.426	14.743	12.402	11.821	11.543	4.024	60.5	
UPM 1619-2602	244.8460106	-26.0425961	-133.9	-154.6	4.3	3.1	15.425	14.502	14.568	11.879	11.310	11.109	2.623	55.3	
UPM 1621-0031	245.3020250	-0.5209803	-115.7	-183.5	7.6	7.7	14.421	13.350	12.756	12.074	11.596	11.532	1.276	[122.1]	b f
UPM 1623-0641	245.7802481	-6.6980106	-186.4	40.7	6.5	6.5	···	···	···	11.051	10.424	10.149	···	···	b
UPM 1624-3133	246.2206158	-31.5640650	-161.0	87.9	9.8	9.8	···	···	···	12.711	11.997	11.845	···	···	b
UPM 1634-1540	248.5736717	-15.6766797	-72.1	-197.0	11.3	10.9	···	···	···	12.908	12.156	11.902	···	···	b
UPM 1638-1033	249.6061678	-10.5661297	-217.3	-41.9	10.2	9.8	15.959	14.378	13.123	11.491	10.891	10.645	2.887	58.2	
UPM 1638-2541	249.7123400	-25.6911056	-136.2	-139.7	3.6	3.6	16.105	13.846	13.824	12.311	11.583	11.458	1.535	105.3	
UPM 1638-3439	249.6381294	-34.6511661	-96.1	-156.2	6.4	14.4	···	···	13.568	12.165	11.622	11.370	···	58.3	b
UPM 1639-2331	249.7811856	-23.5252967	-131.3	-134.4	9.2	3.7	16.818	15.295	13.685	11.451	10.828	10.559	3.844	37.5	
UPM 1642-2833	250.6688403	-28.5619450	-166.5	-100.9	6.4	22.1	···	···	···	13.377	12.849	12.652	···	···	b
UPM 1646-3709	251.7445328	-37.1657722	193.7	-2.2	7.7	7.7	···	···	···	11.056	10.530	10.293	···	···	b
UPM 1647-3213	251.8940731	-32.2208019	-188.2	-37.3	7.8	8.3	···	15.988	15.028	12.602	12.081	11.870	3.386	66.4	
UPM 1648-3459	252.1200667	-34.9967942	178.6	142.5	4.4	4.4	···	14.631	···	10.687	10.161	9.907	3.994	22.1	
UPM 1648-3538	252.0849597	-35.6427183	-102.0	-156.6	7.6	5.0	15.970	14.748	···	11.008	10.503	10.266	3.740	38.5	
UPM 1648-3539	252.0724997	-35.6630103	76.1	-169.7	2.3	2.3	15.961	14.549	13.571	10.890	10.316	10.056	3.659	29.8	
UPM 1650-2440	252.7400719	-24.6745247	-37.8	-177.8	35.2	30.4	···	···	···	11.982	11.355	11.127	···	···	b
UPM 1654-3105	253.6846164	-31.0961000	-32.4	-215.9	7.4	7.2	15.122	13.553	11.977	10.072	9.482	9.237	3.481	23.8	g
UPM 1658-2811	254.7136367	-28.1977644	190.7	179.0	10.3	10.3	17.979	16.677	14.129	13.417	12.904	12.677	3.260	149.9	
UPM 1658-3931	254.5610944	-39.5308172	-140.3	-191.4	8.8	8.9	···	16.787	14.502	12.161	11.556	11.266	4.626	30.2	
UPM 1700-0857	255.0531956	-8.9576528	-19.6	-199.7	13.2	13.2	17.447	15.705	14.262	12.535	11.870	11.639	3.170	77.4	
UPM 1700-2913	255.1488828	-29.2189083	-158.8	96.5	3.5	6.1	···	14.142	12.927	11.843	11.326	11.094	2.299	79.9	

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 1701-0657	255.3763442	-6.9526483	105.6	-160.9	13.9	14.1	...	...	...	12.695	12.064	11.808	...	...	b
UPM 1701-2502	255.4740292	-25.0337903	-78.8	-190.1	4.6	4.6	...	...	...	13.016	12.491	12.276	...	...	b
UPM 1701-3150	255.3130186	-31.8452472	-165.1	-154.8	9.2	9.2	...	...	...	11.344	10.841	10.566	...	...	b
UPM 1701-3345	255.2964308	-33.7500906	-157.2	-99.6	5.6	5.6	...	14.898	13.449	11.496	10.928	10.692	3.402	38.2	
UPM 1704-1459	256.2319803	-14.9893325	-114.1	-148.4	4.4	4.5	17.336	...	...	12.347	11.791	11.571	...	85.2	b
UPM 1704-3141	256.2325125	-31.6892650	-175.2	-169.6	7.3	7.1	...	...	...	12.655	12.006	11.834	...	...	b
UPM 1706-0254	256.6927197	-2.9013867	-122.8	-153.3	12.3	11.9	...	16.016	15.214	13.721	13.074	12.860	2.295	164.7	
UPM 1707-0345	256.8042544	-3.7595239	6.0	-191.4	7.8	7.8	...	...	...	10.865	10.218	10.073	...	...	b
UPM 1707-1438	256.7945428	-14.6436947	-94.6	-164.4	4.7	4.8	17.411	15.843	15.096	13.158	12.519	12.288	2.685	123.9	
UPM 1709-1715	257.4969336	-17.2529044	-196.8	-4.0	6.0	6.1	...	...	...	12.313	11.758	11.530	...	...	b
UPM 1709-2858	257.4467800	-28.9713886	-173.0	-126.4	10.8	10.3	...	...	...	11.234	10.636	10.270	...	...	b
UPM 1710-1055	257.6343403	-10.9268356	-89.1	-246.0	11.3	11.3	17.190	15.900	13.995	12.060	11.508	11.226	3.840	54.9	
UPM 1711-3942	257.8640486	-39.7006067	-168.1	-100.2	11.1	8.4	...	...	...	11.759	11.166	10.948	...	...	b
UPM 1712-4432	258.1053478	-44.5375533	-149.3	-158.6	7.2	6.7	14.386	13.041	14.109	12.028	11.541	11.404	1.013	[33.9]	b c f
UPM 1712-4657	258.0571681	-46.9649431	-154.8	-109.7	4.3	4.3	...	...	...	11.992	11.409	11.147	...	...	b c
UPM 1713-3512	258.3514606	-35.2062569	-182.8	-132.3	7.5	7.3	17.994	16.680	16.283	12.680	11.851	11.656	4.000	40.7	
UPM 1714-2118	258.5668300	-21.3145236	-183.9	-129.4	3.1	3.1	...	...	...	11.710	11.032	10.878	...	...	b
UPM 1718-2245A	259.6129147	-22.7616683	-160.7	-160.8	7.2	6.8	15.469	13.836	13.155	10.385	9.806	9.572	3.451	25.4	d
UPM 1718-2245B	259.6213031	-22.7746183	-161.1	-154.8	10.9	9.6	...	14.787	13.289	10.207	9.608	9.375	4.580	13.2	d e
UPM 1720-1252	260.1161614	-12.8698767	-41.6	-184.2	17.1	12.3	...	13.214	...	11.034	10.467	10.254	2.180	61.0	b g
UPM 1721-4500	260.3965597	-45.0118219	111.2	-181.3	7.0	6.6	14.978	12.715	11.539	10.365	9.776	9.537	2.350	38.8	
UPM 1722-4136	260.5690697	-41.6059956	-170.4	-72.7	5.3	20.1	...	...	...	11.924	11.366	11.112	...	...	b
UPM 1724-0318A	261.1610800	-3.3011636	143.7	-126.7	8.7	8.9	15.536	13.860	13.019	11.833	11.201	10.994	2.027	92.0	d
UPM 1724-0318B	261.1602147	-3.2999100	...	...	...	...	15.536	13.860	13.019	12.925	12.291	12.042	0.935	169.5	a b d e
UPM 1724-2217	261.2276967	-22.2935397	-251.6	-93.6	7.0	7.0	...	...	...	12.042	11.492	11.260	...	...	b
UPM 1725-1703	261.4728428	-17.0606703	-80.5	-163.3	2.8	2.8	...	12.446	12.710	10.927	10.559	10.513	1.519	61.0	
UPM 1725-1749	261.4613711	-17.8228856	-163.8	-123.4	6.4	7.3	...	...	...	10.639	10.250	10.035	...	...	b
UPM 1731-1316	262.9469089	-13.2742833	73.1	-199.8	19.3	11.7	17.463	16.004	14.528	12.690	12.191	11.941	3.314	93.3	
UPM 1732-1639	263.0863078	-16.6663169	-170.8	-147.8	11.0	10.7	...	13.326	12.859	11.800	11.231	11.145	1.526	93.7	
UPM 1733-2051	263.2673667	-20.8637517	41.8	-211.8	14.5	5.7	14.941	13.518	13.304	10.787	10.182	9.974	2.731	37.3	
UPM 1737-2324	264.4041736	-23.4064956	-244.7	-127.3	8.3	8.3	...	...	...	11.322	10.711	10.416	...	...	b
UPM 1738-1917	264.7263142	-19.2951633	21.8	-202.1	4.6	5.1	...	...	...	11.358	10.832	10.622	...	...	b
UPM 1740-4110	265.2443694	-41.1801894	-68.5	-166.7	6.8	7.3	...	14.331	12.963	11.261	10.678	10.382	3.070	38.2	
UPM 1741-4536	265.4011836	-45.6043703	168.4	194.1	10.4	10.4	...	...	...	11.021	10.512	10.236	...	...	b
UPM 1743-3957	265.9756108	-39.9611264	-191.0	84.3	8.3	8.0	...	15.433	13.811	12.184	11.692	11.431	3.249	61.1	
UPM 1745-1322	266.4679789	-13.3765100	-183.1	-35.8	6.2	6.1	17.039	15.378	14.462	12.724	12.077	11.902	2.654	111.3	
UPM 1745-4336	266.3273608	-43.6112189	23.4	-220.2	8.6	7.9	...	...	...	10.374	9.790	9.503	...	...	b
UPM 1746-1246	266.5727764	-12.7717856	44.4	-186.4	6.8	6.6	17.622	16.100	14.686	12.556	12.011	11.767	3.544	76.0	
UPM 1749-3138	267.4376153	-31.6363372	-139.1	-122.8	2.0	2.0	14.024	12.310	11.420	10.334	9.724	9.567	1.976	48.9	
UPM 1749-4135	267.4756842	-41.5986675	-107.8	-184.7	4.3	4.3	...	...	...	10.349	9.736	9.544	...	...	b c
UPM 1749-4313	267.4106522	-43.2245928	64.1	-172.6	2.7	2.7	...	13.347	11.682	11.380	10.832	10.596	1.967	75.3	
UPM 1749-4404B	267.4638828	-44.0790978	0.0	-204.9	4.3	3.9	...	...	...	11.688	11.147	10.870	...	...	a b c d
UPM 1750-0406	267.6260231	-4.1000422	-108.5	-145.0	7.6	8.5	16.733	15.701	14.428	11.896	11.381	11.146	3.805	51.0	
UPM 1750-1456	267.7385731	-14.9423142	-61.0	-172.0	22.7	4.5	...	...	...	8.874	8.281	8.030	...	...	b
UPM 1751-2404	267.7996450	-24.0717064	-114.2	-184.3	15.7	13.6	...	...	...	11.631	10.728	10.473	...	...	b
UPM 1754-3805	268.6284406	-38.0912072	57.7	-206.3	7.1	6.8	...	...	...	11.641	11.077	10.839	...	...	b
UPM 1756-2126	269.2477247	-21.4437422	-161.3	92.0	5.7	7.0	17.869	16.628	16.074	12.485	11.797	11.548	4.143	38.5	
UPM 1756-4052	269.1487281	-40.8780769	-77.5	-196.1	19.7	19.7	...	14.372	13.688	13.299	12.667	12.607	1.073	[215.7]	b f
UPM 1757-3936	269.4195217	-39.6043317	-266.3	-158.6	7.3	7.0	...	13.759	...	11.284	10.734	10.545	2.475	61.1	b
UPM 1757-4013	269.2794617	-40.2270539	-75.0	-194.2	6.5	6.1	...	12.349	...	11.883	11.302	11.200	0.466	...	b
UPM 1757-4632B	269.3754317	-46.5427658	59.7	-185.1	10.6	6.5	...	...	...	10.847	10.264	10.007	...	...	b d
UPM 1758-4615	269.5915203	-46.2631747	-171.7	-82.6	25.0	7.2	...	...	...	12.842	12.323	12.077	...	...	b
UPM 1759-4528	269.7754394	-45.4816806	-42.4	-188.1	10.4	10.8	...	...	...	11.429	10.891	10.601	...	...	b
UPM 1800-4642	270.1561303	-46.7136864	-44.7	-206.8	25.0	19.7	...	...	11.532	10.872	10.267	10.009	...	51.3	b
UPM 1804-0902	271.0980389	-9.0451769	164.6	-158.9	5.8	6.4	...	...	...	12.081	11.395	11.162	...	...	b
UPM 1805-4112	271.4910153	-41.2111136	14.8	-185.5	7.9	7.9	...	14.013	12.634	12.757	12.060	11.870	1.256	[155.9]	b f
UPM 1806-1700	271.7052058	-17.0047383	-23.7	-181.0	4.8	4.9	...	...	...	10.873	10.214	9.957	...	...	b c
UPM 1810-4412	272.7016906	-44.2066736	133.6	-139.9	4.8	3.9	...	...	...	11.616	11.037	10.793	...	...	b c
UPM 1811-0139	272.9795842	-1.6625278	-13.3	-182.6	6.5	6.5	...	...	...	11.236	10.637	10.563	...	...	b
UPM 1811-3907	272.9450564	-39.1204408	198.7	207.8	5.3	5.4	...	15.619	15.210	13.780	13.230	12.961	1.839	[180.2]	c f
UPM 1812-0445	273.0286425	-4.7643792	239.4	-61.1	7.8	7.8	18.072	16.984	15.462	12.316	11.828	11.509	4.668	50.4	
UPM 1812-3958	273.1333542	-39.9774706	-125.7	-150.8	8.0	8.2	...	...	...	12.478	12.721	12.126	11.969	...	...	b
UPM 1817-0833	274.4449242	-8.5561069	-65.6	-189.9	12.2	9.1	17.222	16.383	16.030	12.504	11.794	11.599	3.879	51.0	
UPM 1818-2854	274.5728911	-28.9023606	-179.0	56.8	13.3	12.7	...	...	...	12.613	12.037	11.831	...	...	b

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 1818-3727	274.6185211	-37.4610811	-161.2	-187.0	11.1	15.9	...	...	...	11.970	11.454	11.210	...	...	b
UPM 1818-3931	274.6280806	-39.5268339	134.9	-221.7	8.6	8.6	...	...	...	11.548	10.966	10.776	...	...	b
UPM 1819-0734	274.8175769	-7.5811236	-173.8	-209.9	8.7	8.8	15.950	15.187	15.621	11.121	10.363	10.143	4.066	33.4	
UPM 1822-3206	275.5753822	-32.1135317	-56.7	-174.1	18.7	16.7	...	...	...	14.030	13.493	13.280	...	...	b
UPM 1822-3810	275.7248661	-38.1719125	-152.6	-111.2	3.9	4.0	...	...	...	11.978	11.444	11.237	...	...	b
UPM 1823-3237	275.9087906	-32.6205678	-206.0	37.0	7.1	6.9	...	12.757	11.493	10.897	10.321	10.060	1.860	58.9	
UPM 1823-4055	275.8996567	-40.9293583	-196.9	-178.2	8.0	8.0	...	...	...	11.567	11.025	10.817	...	...	b
UPM 1824-1843	276.0411947	-18.7243439	-181.5	-26.4	4.6	11.4	...	11.434	...	10.554	10.150	10.057	0.880	...	b
UPM 1827-3955	276.8721647	-39.9218242	-45.5	-184.0	7.4	7.4	...	12.337	10.815	10.803	10.208	9.942	1.534	61.2	b
UPM 1828-3011	277.1039697	-30.1852867	-227.6	9.7	34.3	7.7	...	...	...	12.077	11.530	11.244	...	...	b
UPM 1828-3826	277.1754025	-38.4387294	-107.1	-226.0	7.2	7.1	...	...	...	11.835	11.212	10.950	...	...	b
UPM 1828-3918	277.1296564	-39.3128139	39.5	-217.8	7.2	7.0	16.517	14.283	12.758	11.920	11.401	11.185	2.363	86.3	
UPM 1831-1919	277.8215872	-19.3332856	-121.3	-139.6	4.1	4.8	16.419	14.678	13.446	11.001	10.419	10.211	3.677	33.7	
UPM 1831-2005	277.8505681	-20.0885764	2.2	-198.3	22.2	10.8	...	...	...	11.451	10.748	10.566	...	...	b
UPM 1831-3017	277.9810053	-30.2859400	-95.5	-162.4	7.4	7.0	...	...	...	12.022	11.433	11.198	...	...	b
UPM 1832-3853	278.1483619	-38.8879883	24.3	-185.5	4.8	4.9	...	...	...	12.239	11.703	11.441	...	...	b
UPM 1834-2656	278.5639625	-26.9406214	169.4	75.0	11.8	11.8	...	...	...	13.405	12.820	12.658	...	...	b
UPM 1834-3308	278.5452358	-33.1453625	46.8	-198.0	44.6	23.6	15.886	13.239	11.394	11.229	10.667	10.424	2.010	63.6	
UPM 1836-0915	279.0383847	-9.2573003	-154.3	153.0	6.0	6.1	17.858	16.610	15.380	12.580	12.055	11.792	4.030	58.7	
UPM 1839-1913	279.9685653	-19.2177800	151.3	-104.3	8.4	8.5	...	...	...	13.262	12.550	12.334	...	...	b
UPM 1840-1934	280.1299600	-19.5831464	201.2	-89.8	8.8	8.1	...	13.733	12.400	10.264	9.706	9.450	3.469	20.7	
UPM 1840-2334	280.0762169	-23.5667811	-128.2	-143.8	6.8	3.0	12.605	11.900	11.719	11.549	11.300	11.228	0.351	107.6	b
UPM 1840-2614	280.2257300	-26.2364583	-176.7	-77.1	9.7	22.6	13.515	12.155	11.377	10.890	10.258	10.105	1.265	68.3	
UPM 1841-1841	280.4988975	-18.6836078	72.4	-210.7	11.8	32.7	...	...	...	11.705	11.141	10.844	...	...	b
UPM 1841-1902	280.4059922	-19.0437531	-14.8	-252.1	10.0	10.1	...	...	...	11.847	11.254	10.958	...	...	b
UPM 1841-2852	280.3630056	-28.8708058	-113.3	-182.5	10.6	10.6	...	...	...	12.277	11.757	11.445	...	...	b c
UPM 1841-4049	280.3558444	-40.8271589	110.8	-160.4	6.5	5.9	...	...	...	13.108	12.509	12.313	...	...	b
UPM 1842-2736	280.7361064	-27.6091083	77.9	-163.2	9.3	9.3	13.426	...	10.951	10.023	9.356	9.184	...	29.6	b
UPM 1846-0947	281.5706144	-9.7963978	-150.4	-115.9	6.7	7.3	17.167	...	...	12.344	11.764	11.497	...	88.7	b
UPM 1848-0252	282.0143783	-2.8768681	32.0	-183.3	6.0	8.4	17.550	16.574	15.273	11.510	10.973	10.640	5.064	26.9	
UPM 1850-1011	282.7145042	-10.1934358	-102.2	-165.6	7.5	7.5	...	...	...	10.893	10.296	10.068	...	...	b
UPM 1851-1431	282.9501331	-14.5258975	-164.4	-92.0	4.5	4.5	15.938	14.662	13.257	11.551	11.005	10.746	3.111	60.0	
UPM 1851-2232	282.9338092	-22.5417239	209.9	10.0	7.3	9.5	16.115	13.559	12.603	11.955	11.379	11.194	1.604	105.8	
UPM 1851-3840	282.8074922	-38.6741419	-161.2	82.0	6.2	6.2	...	...	...	10.575	9.983	9.704	...	...	b
UPM 1852-2751	283.0031728	-27.8602172	82.6	-174.6	7.9	8.8	...	...	...	12.419	11.857	11.593	...	...	b
UPM 1858-3548	284.6541453	-35.8062356	-102.9	178.4	6.7	6.7	...	...	...	11.275	10.871	10.760	...	...	b c
UPM 1859-1701	284.8129344	-17.0311458	-127.7	-164.7	8.3	8.3	...	...	...	10.923	10.345	10.034	...	...	b
UPM 1900-0511	285.2324742	-5.1836367	-90.8	-168.3	7.2	7.0	13.538	11.997	11.474	10.426	9.765	9.570	1.571	43.5	
UPM 1902-3731	285.5237094	-37.5289453	163.2	-82.3	12.1	12.2	18.665	16.574	15.884	13.833	13.187	12.935	2.741	158.4	
UPM 1907-0221	286.7786636	-2.3570300	-23.4	-192.6	7.2	7.1	13.359	12.590	12.326	11.287	10.812	10.740	1.303	76.8	b
UPM 1917-2949	289.4523744	-29.8228444	-70.6	-223.4	10.8	10.4	...	...	...	11.927	11.374	11.094	...	...	b
UPM 1920-1606	290.0811403	-16.1009153	-175.4	68.9	10.9	11.0	...	...	17.198	16.119	15.579	15.625	...	574.5	b
UPM 1920-2206	290.1098181	-22.1062475	122.9	-161.4	14.4	9.4	...	...	...	12.085	11.542	11.280	...	...	b
UPM 1923-4026	290.7523894	-40.4484822	-154.6	-96.7	7.7	9.5	...	16.086	14.192	12.847	12.337	12.100	3.239	88.5	
UPM 1925-0916	291.4896428	-9.2686953	-58.8	-197.4	6.4	6.2	...	14.429	...	12.428	11.800	11.617	2.001	121.9	b
UPM 1925-3712	291.4461181	-37.2007175	138.7	-165.4	15.2	15.1	...	...	13.683	12.134	11.536	11.289	...	47.8	b
UPM 1931-4001	292.9411467	-40.0227744	-3.1	-185.0	1.9	1.9	14.966	12.936	11.356	10.714	10.092	9.861	2.222	50.2	
UPM 1933-2916	293.3358858	-29.2750011	-90.4	-159.5	2.9	5.1	15.935	13.822	11.914	10.767	10.151	9.882	3.055	34.6	
UPM 1940-0508	295.1044458	-5.1410269	22.0	-181.3	8.1	8.0	...	...	...	11.602	11.074	10.825	...	...	b
UPM 1943-0035	295.9131372	-0.5899383	-256.9	22.2	11.4	10.0	...	...	...	12.195	11.669	11.372	...	...	b
UPM 1947-3542	296.7613983	-35.7157425	24.0	-180.4	2.5	2.6	16.879	14.954	13.555	12.269	11.659	11.436	2.685	86.0	
UPM 1950-0135	297.6302547	-1.5941806	223.2	2.3	10.2	10.1	...	...	...	12.355	11.803	11.575	...	...	b
UPM 1952-0813	298.1828144	-8.2235433	103.0	-220.6	7.8	9.1	15.568	13.655	11.782	10.585	9.968	9.683	3.070	32.6	
UPM 1953-0508	298.3124231	-5.1386344	-45.1	-196.0	7.3	7.1	...	14.484	13.942	12.870	12.395	12.296	1.614	160.4	
UPM 1954-0139	298.6503828	-1.6506567	-93.6	-164.6	9.0	9.1	16.468	15.236	14.497	13.541	12.951	12.815	1.695	[213.2]	f
UPM 1955-3426	298.9125511	-34.4337736	-92.3	-161.9	4.8	4.7	15.620	15.545	...	12.908	12.406	12.128	2.637	116.8	b c
UPM 1957-3801	299.4516389	-38.0268108	119.4	-160.3	6.6	17.2	...	...	...	12.317	11.721	11.521	...	...	b
UPM 1958-3348	299.6281386	-33.8102706	122.5	-132.4	5.7	5.0	...	...	...	12.145	11.624	11.377	...	...	b
UPM 2007-0132	301.7682706	-1.5366978	6.6	-184.1	16.4	16.1	...	15.506	...	12.448	11.871	11.591	3.058	71.5	b
UPM 2007-0312	301.9236269	-3.2085131	-159.3	-86.5	7.3	7.2	16.388	14.715	12.952	11.235	10.702	10.462	3.480	41.6	
UPM 2009-0041	302.4692369	-0.6924347	115.0	-191.9	14.0	14.7	17.493	15.536	13.355	12.277	11.749	11.497	3.259	72.2	
UPM 2009-3305	302.2734844	-33.0964475	60.3	-179.0	22.0	16.9	17.666	15.906	14.344	13.039	12.533	12.329	2.867	129.1	
UPM 2011-0002	302.9155206	-0.0494872	82.3	-262.2	10.4	10.7	...	...	...	11.420	10.819	10.684	...	...	b
UPM 2011-0010	302.7694014	-0.1825764	-141.8	-130.9	11.1	8.4	...	...	12.726	11.881	11.339	11.119	...	79.4	b

TABLE 2—*Continued*

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sigμ_α (mas/yr)	sigμ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 2011-0139	302.8264014	-1.6649031	129.2	-127.5	15.9	16.0	17.948	15.746	13.609	12.433	11.860	11.584	3.313	67.8	
UPM 2012-0133	303.1161578	-1.5506017	236.9	-65.7	14.0	13.5	...	...	...	11.962	11.370	11.068	...	...	b
UPM 2014-0124	303.6403675	-1.4061056	144.1	-231.7	7.8	7.9	...	...	12.139	11.284	10.729	10.508	...	59.2	b
UPM 2014-0624	303.5245169	-6.4119417	3.3	-220.4	17.6	17.2	17.444	15.620	14.056	12.989	12.373	12.223	2.631	131.8	
UPM 2014-1634	303.6036331	-16.5819139	-167.7	-192.2	12.1	13.4	...	13.477	...	12.772	12.137	12.020	0.705	...	b
UPM 2019-0754	304.8205911	-7.9011086	127.5	-157.6	6.9	7.4	...	...	...	12.462	12.101	12.066	...	...	b
UPM 2020-0826	305.0236797	-8.4449589	174.3	-48.6	11.2	8.1	...	14.934	12.955	11.903	11.347	11.099	3.031	62.7	
UPM 2024-0638	306.0952239	-6.6395264	75.9	-247.6	10.9	11.1	16.931	14.871	13.039	11.878	11.357	11.085	2.993	64.4	
UPM 2045-0612	311.4779600	-6.2101506	-143.8	-120.3	10.0	10.1	...	15.646	13.667	12.937	12.409	12.167	2.709	122.0	
UPM 2047-0429	311.8002206	-4.4950453	143.0	-117.9	6.4	6.6	12.644	11.975	11.578	11.659	11.348	11.398	0.316	...	b
UPM 2047-2232	311.9131269	-22.5408683	-136.3	-128.9	9.8	10.0	...	...	...	13.261	12.733	12.634	...	...	b
UPM 2047-3246	311.9777267	-32.7689467	-242.1	197.9	7.2	7.4	...	...	...	10.917	10.373	10.143	...	...	b
UPM 2049-0304A	312.4151003	-3.0785519	83.1	-185.7	7.0	7.3	...	...	...	12.889	12.288	12.072	...	...	b d
UPM 2049-0304B	312.4151678	-3.0771406	...	...	...	...	...	...	...	14.444	13.943	13.673	...	...	a b d e
UPM 2050-1541	312.5709881	-15.6922022	84.2	-178.4	3.2	4.7	15.656	13.702	12.131	11.456	10.862	10.580	2.246	70.2	
UPM 2050-4535	312.5937853	-45.5929939	17.8	-207.4	9.5	9.6	17.265	15.170	14.302	13.405	12.863	12.688	1.765	[214.1]	f
UPM 2057-0911	314.4559047	-9.1875750	129.1	-168.5	8.7	8.4	...	12.472	11.512	11.501	10.806	10.656	0.971	87.5	b
UPM 2058-0332	314.6363908	-3.5394206	-38.0	-198.2	6.6	8.1	13.785	11.439	10.095	10.436	9.823	9.618	1.003	44.8	b
UPM 2105-1703	316.4376317	-17.0536781	81.7	-161.3	2.1	2.3	15.955	14.016	12.396	11.385	10.749	10.506	2.631	57.4	
UPM 2115-0631	318.8872478	-6.5276206	191.1	28.7	7.6	8.4	...	...	...	12.633	12.090	11.891	...	...	b
UPM 2118-2101	319.5260700	-21.0311750	188.4	30.4	15.9	17.3	18.188	15.914	14.188	13.103	12.484	12.212	2.811	108.6	
UPM 2131-3027	322.7657644	-30.4592144	47.4	-173.7	3.7	3.7	17.497	15.514	13.704	12.264	11.687	11.415	3.250	65.9	
UPM 2140-0613	325.0265956	-6.2270500	-56.1	-210.2	7.9	8.2	13.765	12.664	13.526	12.762	12.356	12.341	-0.098	156.2	b
UPM 2145-4145	326.4178564	-41.7660619	137.1	-125.2	1.7	2.1	16.569	13.895	12.271	11.407	10.885	10.560	2.488	55.7	c
UPM 2152-1147	328.2452208	-11.7888700	150.3	-123.1	1.9	4.1	16.766	14.875	12.787	11.466	10.888	10.632	3.409	44.4	
UPM 2154-0143	328.6042781	-1.7273786	259.8	-7.5	11.2	11.7	13.464	11.889	10.739	11.170	10.542	10.353	0.719	79.4	b
UPM 2157-0251	329.4304583	-2.8516900	139.8	-132.6	18.1	17.9	18.051	...	14.875	13.480	12.902	12.672	...	152.1	
UPM 2222-3528	335.5426575	-35.4820467	-116.0	-155.8	5.9	5.7	...	...	...	13.313	12.672	12.461	...	...	b
UPM 2229-0432B	337.4473828	-4.5360572	...	...	...	...	...	...	...	12.140	11.556	11.319	...	...	b e d a
UPM 2231-1642	337.7917883	-16.7142497	-123.3	-139.2	1.8	1.9	16.421	14.446	12.668	11.850	11.283	11.036	2.596	76.2	
UPM 2232-0225	338.1181078	-2.4226789	181.2	-31.2	11.1	11.5	16.226	14.169	12.605	11.514	10.938	10.684	2.655	60.9	
UPM 2233-0003	338.2930958	-0.0525181	247.8	99.7	8.7	8.8	...	15.656	...	12.763	12.209	11.978	2.893	94.6	b
UPM 2237-0118	339.3505139	-1.3070036	-147.7	-110.1	7.0	7.0	14.926	13.000	11.919	11.674	11.029	10.877	1.326	97.5	
UPM 2244-4333	341.0835264	-43.5574258	183.0	-51.4	14.8	15.1	17.708	15.718	14.089	13.114	12.529	12.353	2.604	138.3	
UPM 2246-0017	341.6494342	-0.2863092	193.6	-28.5	10.3	10.3	17.545	15.654	13.935	12.665	12.130	11.873	2.989	95.3	
UPM 2248-3255	342.1992344	-32.9243678	-126.6	-174.9	3.8	3.9	...	...	...	12.662	12.120	11.932	...	...	b
UPM 2250-2908A	342.5898331	-29.1365486	186.9	-9.2	5.0	3.0	15.217	13.358	11.795	12.126	11.517	11.293	1.232	115.3	b d
UPM 2250-2908B	342.5883269	-29.1372669	182.3	-17.0	3.7	3.9	15.217	13.358	11.795	13.184	12.599	12.327	0.174	155.7	a d b e
UPM 2251-0201	342.7661222	-2.0260436	50.1	-185.5	7.6	7.6	15.605	13.598	12.627	11.995	11.372	11.176	1.603	110.8	
UPM 2305-4612	346.2905092	-46.2043653	143.5	-110.4	7.8	2.5	16.914	15.068	13.649	12.773	12.240	11.993	2.295	136.2	
UPM 2306-0315	346.6112989	-3.2637836	181.1	-55.6	10.2	10.2	17.564	15.549	13.841	12.506	11.947	11.661	3.043	80.8	
UPM 2308-1954	347.1959358	-19.9085208	183.6	-0.3	13.0	12.1	13.693	12.059	11.387	11.479	11.092	11.006	0.580	131.5	b a
UPM 2310-0410	347.5503997	-4.1822806	155.6	-93.0	11.0	11.1	...	15.438	14.685	13.920	13.313	13.160	1.518	[263.6]	f
UPM 2320-0006	350.0481022	-0.1140686	78.7	-165.2	9.3	2.5	13.636	11.776	10.884	10.299	9.637	9.479	1.477	50.0	
UPM 2325-1715	351.4973083	-17.2589567	180.0	254.5	11.5	10.5	16.160	13.342	11.790	11.113	10.486	10.218	2.229	50.7	
UPM 2328-0546	352.0857586	-5.7781261	183.3	62.8	6.6	7.2	...	...	...	10.995	10.415	10.162	...	...	b
UPM 2329-0510	352.4821203	-5.1685144	159.2	88.3	12.7	9.7	17.693	15.621	13.802	12.583	12.002	11.781	3.038	85.5	
UPM 2331-0233	352.8670611	-2.5567644	-189.0	-114.3	8.6	11.3	17.038	14.938	13.029	11.864	11.303	11.000	3.074	58.3	
UPM 2331-0617	352.7987228	-6.2871728	180.6	36.1	10.3	10.3	...	...	...	12.722	12.079	11.904	...	...	b
UPM 2334-4145	353.6053231	-41.7568239	-20.3	-187.7	2.4	3.2	17.676	15.973	15.112	14.059	13.421	13.279	1.914	[273.8]	f
UPM 2349-1023	357.2962428	-10.3857086	169.5	71.8	13.1	14.1	17.811	15.720	13.845	12.954	12.352	12.065	2.766	109.4	
UPM 2356-0453	359.1178706	-4.8861358	189.6	-44.4	19.9	18.6	18.052	16.087	14.310	12.885	12.374	12.113	3.202	95.4	

[a]Proper motions suspect

[b]Number of relations used for distance estimate < 6: plate distance less reliable

[c]SuperCOSMOS plate magnitudes suspect

[d]Common proper motion companion; see Table 4

[e]Not detected during automated search but noticed by eye during the blinking process

[f]Subdwarf candidate selected from RPM diagram; plate distance [in bracket] is incorrect

[g]Possible NLTT star with a position difference $> 90''$ when compared to UCAC3 position

Table 3

New UCAC3 High Proper Motion Systems estimated to be within 25 pc between Declinations $-47°$ and $0°$ with $0\farcs40\ \mathrm{yr}^{-1} > \mu \geq 0\farcs18\ \mathrm{yr}^{-1}$

Name	RA J2000.0 (deg)	DEC J2000.0 (deg)	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	sig μ_α (mas/yr)	sig μ_δ (mas/yr)	B_J	R_{59F}	I_{IVN}	J	H	K_s	$R_{59F} - J$	Est Dist (pc)	Notes
UPM 1349-4228	207.2552625	-42.4784189	-161.9	-84.6	1.3	3.0	14.468	11.703	···	9.449	8.863	8.622	2.254	24.4	
UPM 1648-3459	252.1200667	-34.9967942	178.6	142.5	4.4	4.4	···	14.631	···	10.687	10.161	9.907	3.944	22.1	
UPM 1654-3105	253.6846164	-31.0961000	-32.4	-215.9	7.4	7.2	15.122	13.553	11.977	10.072	9.482	9.237	3.481	23.8	a
UPM 1718-2245A	259.6129147	-22.7616683	-160.7	-160.8	7.2	6.8	15.469	13.836	13.155	10.385	9.806	9.572	3.451	25.4	b
UPM 1718-2245B	259.6213031	-22.7746183	-161.1	-154.8	10.9	9.6	···	14.787	13.289	10.207	9.608	9.375	4.580	13.2	b c
UPM 1840-1934	280.1299600	-19.5831464	201.2	-89.8	8.8	8.1	···	13.733	12.400	10.264	9.706	9.450	3.469	20.7	

[a]Possible NLTT star with a position difference $> 90''$ when compared to UCAC3 position

[b]Common proper motion companion; see Table 4

[c]Not detected during automated search but noticed by eye during the blinking process

Table 4
Common Proper Motion Candidate Systems

Primary	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	Distance (pc)	Secondary/Tertiary	$\mu_\alpha \cos\delta$ (mas/yr)	μ_δ (mas/yr)	Distance (pc)	Separation ($''$)	θ ($^\circ$)	notes
UPM 0209-3339A	-86.1	-166.9	49.5	UPM 0209-3339B	-112.9	-170.2	···	11.6	78.1	a b
UPM 0443-4129A	186.1	4.3	39.3	2MASS J04430760-4128575B	-107.5	-53.1	···	6.8	339.2	a b c
UPM 0528-4313A	-75.6	164.7	70.4	UPM 0528-4313B	-86.3	163.2	109.1	42.1	209.0	a
UPM 0659-0052A	-58.3	-184.1	78.2	UPM 0659-0052B	···	···	···	13.8	151.6	a b c
UPM 0704-0602A	···	···	123.4	UPM 0704-0602B	99.5	-153.0	37.8	12.2	359.1	a b c d
UPM 0747-2537A	-148.5	101.9	40.6	UPM 0747-2537B	-151.3	102.3	47.3	12.0	237.4	b
UPM 0800-0617A	135.2	-233.8	[175.5]	UPM 0800-0617B	···	···	···	5.8	297.2	a b c e
BD-04 2807A	-142.1	-37.1	19.5	UPM 1009-0501B	-190.5	92.1	···	20.9	338.5	a b
UPM 1020-0633A	-179.8	-27.8	34.8	SCR 1020-0634B	-181.5	-24.2	37.5	87.3	157.2	
UPM 1031-0024A	-207.4	-105.6	55.1	UPM 1031-0024B	-142.5	-96.9	···	7.4	91.4	a b f
UPM 1056-0542A	-98.1	-173.8	76.5	UPM 1056-0542B	-63.9	-173.3	···	9.0	86.2	a b
UPM 1142-2055A	-186.7	44.2	41.2	UPM 1142-2055B	···	···	···	8.3	167.6	a b c
NLTT 28641A	-201.8	6.2	···	UPM 1149-0019B	-201.5	2.2	···	27.3	128.2	a b
UPM 1159-3623A	-182.1	-101.4	113.1	UPM 1159-3623B	-172.6	-92.4	132.4	13.6	303.7	a
UPM 1226-2020A	-137.6	-119.8	72.3	UPM 1226-2020B	-146.3	-117.3	···	7.0	333.3	a b
SCR 1226-3515A	-192.3	41.0	56.5	UPM 1226-3516B	-200.5	38.3	127.5	49.8	191.3	a g
				UPM 1226-3516C	-115.2	8.5	243.3	97.0	146.9	a c g
UPM 1315-2904A	-190.6	-27.5	89.6	UPM 1315-2904B	-209.7	-1.5	149.3	5.9	332.6	a
2MASS J13465039-2112266A	-186.8	-44.0	46.8	UPM 1346-2111B	-112.1	-60.0	86.8	82.2	350.8	a c
UPM 1718-2245A	-160.7	-160.8	25.4	UPM 1718-2245B	-161.1	-154.8	13.2	54.3	149.2	a
UPM 1724-0318A	143.7	-126.7	92.0	UPM 1724-0318B	···	···	169.5	5.5	325.4	a b c
TYC 7897 997 1A	-10.4	-160.2	40.3	UPM 1749-4404B	0.0	-204.9	···	19.8	254.0	a b c d
TYC 8344 154 1A	51.6	-179.5	···	UPM 1757-4632B	59.7	-185.1	···	30.7	296.9	a b
UPM 2049-0304A	83.1	-185.7	···	UPM 2049-0304B	···	···	···	5.3	1.5	a b c
2MASS J22294694-0432036A	160.9	-86.5	50.8	UPM 2229-0432B	···	···	···	8.7	134.7	a b c
UPM 2250-2908A	186.9	-9.2	115.3	UPM 2250-2908B	182.3	-17.0	155.7	5.4	241.4	a b c

[a]Not detected during automated search but noticed by eye during the blinking process

[b]Number of relations used for distance estimate < 6; plate distance less reliable

[c]Proper motions suspect

[d]SuperCOSMOS plate magnitudes suspect

[e]Subdwarf candidate selected from RPM diagram; plate distance [in bracket] is incorrect

[f]Source not in 2MASS

[g]Possible NLTT star with a position difference $> 90''$ when compared to UCAC3 position